Vol. 121, No. 4

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

July 26, 1945

Restrictions Limit Scandinavian Sources

Lack of Fuel for Production Processes, Need for Wood as Heating Material, Price Factors and Shipping Limitations Add up to Probable Shortage from Scandinavia, Dauman Believes.

Between 300,000 and 350,000 tons of Swedish pulp will be imported to this country by the end of the year, because that is all the shipping space that had so far been allocated and this tonnage will consist primarily of unbleached sulphite and unbleached Kraft. That is the estimate of Samuel Dauman, vice-president of Gottesman and Company, Incorporated, woodpulp importers, who flew to Sweden by American Export Line plane on June 26th and direct from Sweden via United States Army Air Transport plane, leaving there on Sunday, July 15th and after short stops in Iceland and Labrador reached the United States on Monday, the 16th. Mr. Dauman went abroad with the purpose of making a study of pulp and paper supplies, not only for the United Staes but for all world markets. En route to Sweden, he made a short visit in London, reaching Stockholm before July 1st. Mr. Dauman called on a number of Swedish pulp and paper mills in making a direct study of the objects of his trip.

Very little bleached pulp will be shipped, Mr. Dauman finds, because the Swedish mills feel that they would suffer a substantial loss if they delivered this grade to America at present ceiling prices. Moreover, the production of bleached pulp is limited due to a lack of chlorine, and Sweden is also seriously short of salt cake for the production of sulphate pulps. He was also informed, in regard to this last item, that Sweden had made contracts for very substantial quantities of sodium sulphate (salt cake) in the United States and Canada.

Pulp Wood Used for Fuel

One of the outstanding impressions of Mr. Dauman's trip was a visit to the power plant of one of the largest pulp manufacturers in northern Sweden. In this power plant there were five coal burning furnaces and three wood burning furnaces. The five coal burning furnaces were idle and rusty from disuse over the past few years due to the lack of coal. The three wood furnaces were in operation, burning not only the ordinary fuel wood but also the finest pulp wood. He said it was heartbreaking to see such fine material being permanently destroyed. This, he reported, is typical of the fuel situation at all the Swedish pulp mills and it had its counterpart in huge stacks of pulp wood in the cities of Sweden, which the Government had accumulated to parcel out to householders for heating purposes. Furthermore, all residential buildings in Sweden are only permitted to make hot water once a week. The hotels have hot water every day, but the guests are charged extra for this.

The pulp mills, he stated have recently been advised that at least 25% of the pulp wood that they will cut this year, or that they have on hand, will be requisitioned by the Government for fuel. While the Swedish Government has just arranged a treaty with Poland whereby Sweden is to get 1,000,000 tons of coal and 200,000 tons of coke between now and the end of the year, if Sweden receives this coal and coke it will all be allocated for Government utilities and not for use in private enterprise. It is questionable whether Poland will be able to make deliveries of this coal this year due to transportation difficulties.

Production May Drop Further

The power situation as described above, taking into account the pulp wood which will be taken away from the mills, has restricted pulp mill operation at around 50% to 60% and it is feared that during the coming six to nine months they will be unable to even maintain the present rate of production. It can be well understood that because of these conditions the pulp producing costs are very high. On this account, the Swedish producers of pulp, as much as they would like to renew their American connections and ship the bulk of their product to America, have been forced to limit sales on this market and find other outlets where substantially higher prices are obtainable.

Shipping is regulated by the United Maritime Association and steamers have not yet been made available in sufficient amount even to transport the quantities booked for shipment July, August and September. As a result of this, of the tonnage booked for shipment during this quarter, shipping space (up to the time Mr. Dauman left Sweden Sunday, July 15th) has only been made available for about 40%. The Swedish manufacturers are at least hopeful that the shipping situation will improve since the machinists' and mechanics' strike, which has existed in Sweden for the past six to seven months, has now ended and may permit many ships in dry dock in Sweden to be repaired.

Commenting on the newsprint situation, Mr. Dauman stated that very meager supplies, if any, can be expected from Scandinavia to relieve the American shortage this year, or for some time to come, as the demands made upon Scandinavians now is much greater than they are in a position to meet. These demands come from England, the Continent, and

(Continued on page 24)

Consolidated Signs Contract For V-J Day

Employees Will Receive Full Day's Pay for 24-Hour Shut-Down on Termination of War in Pacific—Banta Co. Plans Expansion—Veterans on Kimberly-Clark Payroll — Other Industrial News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 23, 1945—All mills of the Consolidated Water Power and Paper Company—Wisconsin Rapids, Biron, Appleton, Stevens Point, Wis.,—will be shut down for a 24-hour period, after V-J day, with full 8-hour pay, under a provision in the 1945 contract announced Wednesday, July 11, by Stanton W. Mead, vice president and director of manufacture.

All workers will be given a Christmas bonus of $25, if they have been steadily employed by Consolidated since May 1. The bonus, allowable under the wage stabilization law, is to be given for this year only.

The contract was signed by officials of the company and four American Federation of Labor unions, and covers 2,000 hourly-paid workers in five divisions, the Plastics division at Wisconsin Rapids being included.

While the vacation system remains unchanged, with employes working one year or more receiving 48 hours' pay and those with records of five years or more receiving 96 hours' pay, the company and the unions have agreed that no vacation would be taken and that vacation pay would be given in lieu of time off. An acute labor shortage was largely responsible for this decision.

A 2-cent increase in the night shift differential, from 3 to 5 cents, and a maximum of six hours' pay for all regular crews engaged in putting on wires were other new provisions. The differential pay provision has received approval of the War Labor Board, and is retroactive to May 1, Mr. Mead announced.

Mr. Mead, Leo J. Barrette, general personnel manager, and the division managers represented the company in the negotiations. The unions taking part were: International Brotherhood of Papermakers, Locals 187 and 116; International Brotherhood of Pulp, Sulphite and Paper Mill Workers, Locals 94, 81, 58 and 102; International Brotherhood of Electrical Workers, Local 1147, and International Association of Machinists, Local 655.

Similar provisions were announced July 18 in the new contract between Ahdawagam Paper Products Company, an affiliate of Consolidated, and Local 195 of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers. There was some revision in the present apprenticeship system, and employes eligible for two weeks vacation will take only one in actual time off, according to Frank Walsh, manager.

Banta Co. Plans Expansion

The George Banta Publishing Company, Menasha, Wis., is entering the first phase of a long range expansion plan. The company recently received War Production Board approval to build the first unit of a new printing plant between Menasha and Appleton, Wis.

Preliminary surveys have been completed; plans for the first structure are in the hands of several Wisconsin contractors for the preparation of bids; and the railroad and general grading contracts have been let.

Located along the tracks of the Milwaukee Railroad, one mile north of the city limits of Menasha, the first unit, 202 by 127 feet, will be used for light manufacturing in the finishing, packing and warehousing of paper-bound books which the company produces in large quantity for the United States Armed Forces Institute. As future units are added, more of the manufacturing processes will be moved.

Thilmany Employes Top Bond Quota

Employes of Thilmany Pulp and Paper Company, Kaukauna, Wis., have purchased a total of $87,018.75 worth of war bonds in the Seventh War Bond Drive. This amounted to 116% of the mill's assigned quota of $75,000.

Purchase of $86,018.75 in war bonds by employes of Marathon Corporation at Menasha, Wis., during the drive was reported recently. A total of $66,975 was purchased through the payroll deduction plan, and an additional $19,043.75 of cash purchases was reported by the 1,242 employes participating.

As an added incentive, the corporation gave away $300 in war bonds through a weekly drawing. To qualify for the drawings, an employe had to purchase his full individual Seventh War Loan quota of bonds as established by the United States Treasury Department.

Lakeview Foremen's Club to Meet

The Lakeview Foremen's Club, newly organized and including executives from managers through supervisors and foremen, will have election of officers and installation at a meeting planned for Thursday evening August 16, at Neenah, Wis.

Details of the organization program, which is to include supervisory training as part of the monthly sessions, are to be announced after the August session. The organization has a potential membership of 95 from the mill. Education, literature, outside speakers and other features will be part of the training program.

Mills Hold and Plan Outings

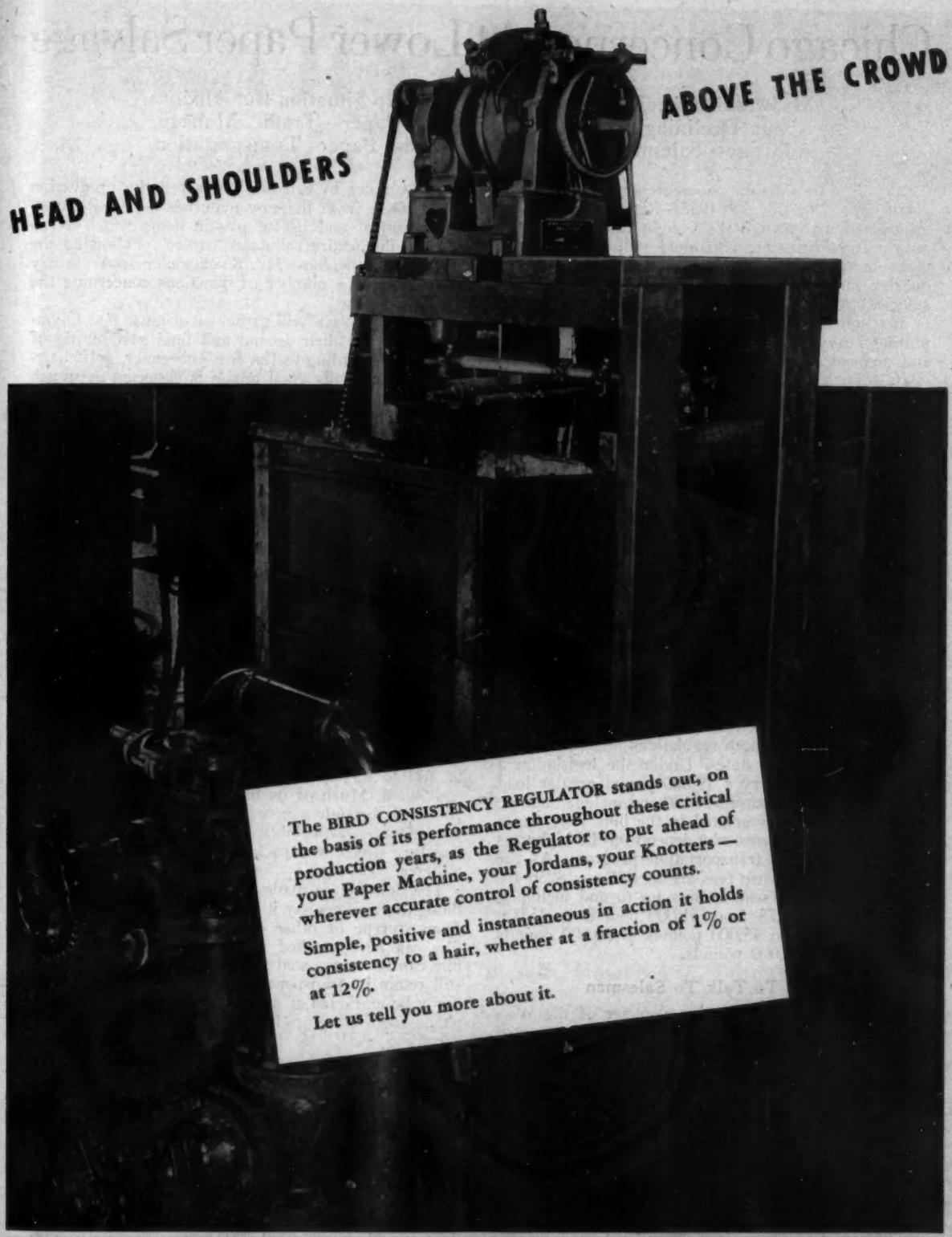
Between 40 and 50 employes of the Parafilm department at Marathon Corporation were present at a picnic July 14 at Stroebe's Island, near Menasha. A softball game provided entertainment, and refreshments were served by the department's supervisors.

Employes of the Gilbert Paper Company, Menasha, Wis., will hold their annual picnic Sunday, August 12. A special feature will be offered by the motor vehicle department of the State of Wisconsin, which will have its automobile driver testing equipment at hand to enable employes to rate themselves on their driving ability. Among other features are a softball game, a card party, a horseshoe tournament, dancing and a special program in the evening.

Register for Marathon Golf Meet

Nearly 120 golfers had registered last week for the annual men's golf jamboree of Marathon Corporation employes at Menasha, Wis., scheduled for July 21. About 50 prizes were to be awarded for both good and bad golf, including a number of good-fellowship prizes.

HEAD AND SHOULDERS ABOVE THE CROWD



The BIRD CONSISTENCY REGULATOR stands out, on the basis of its performance throughout these critical production years, as the Regulator to put ahead of your Paper Machine, your Jordans, your Knotters — wherever accurate control of consistency counts.

Simple, positive and instantaneous in action it holds consistency to a hair, whether at a fraction of 1% or at 12%.

Let us tell you more about it.

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Chicago Concerned At Lower Paper Salvage

Midwest Market More Optimistic Over Pulp Situation But Anxious About Declining Collections of Waste Paper—Traffic Manager Addresses Salesmen — New Law Aids Paper Transportation.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., July 23, 1945—Reports in the Chicago paper market indicate a slight easing up in the pulp market situation with more pulp reported and plans said to be brighter for the fourth quarter. Third quarter improvement, however, is reported as not sufficient to aid the paper end of pulp consumption to any noticeable degree and the Government is still putting heavy pressure on the industry for military and domestic commitments.

Meanwhile, there is increasing concern here as the collections of waste paper have declined despite unusual efforts on the part of the Chicago Waste Paper Salvage Committee to offset this slump. Mills in this area are continuing to cry for paper and present supplies are not at all adequate to look at the immediate future with any sort of equanimity.

All "military" papers are in top demand here and all grades of sulphites are eagerly being sought on all sides. Books and covers showed new evidence of scarcity as the general business market moved in to buy for fall and winter commitments. If the merchandise can be produced, local paper outlets expect heavy demands from retail stores, catalog firms and other mail users.

New Law Aids Transportation

The Governor of Illinois has just signed the so-called "trucking bills" which bring Illinois motor vehicle weight and length regulations into conformity with those of other states. Under the legislation a trucker can now carry a 19,000 pound greater load for a license fee increase of $100 and included among the many agencies interested in the bills were paper jobbers and allied firms who depend on the highways for much of their transportation program. As the bill now stands, license fees are as follows: $250 fee will cover tractor, semi-trailers up to and including 41,000 pounds; $275 from 41,000 pounds to 45,000 pounds; $300 from 45,000 pounds to 50,000 pounds and $350 over 50,000 pounds.

Bryan To Talk To Salesmen

J. E. Bryan, general traffic manager of the Wisconsin Paper and Pulp Association, one of the most well organized and effective organizations working on traffic and rate problems in the company, is scheduled to talk to the western division of the Salesmens Association of the Paper Industry at the regular Monday noon meeting of the SAPEYES to be held on August 13 at the Hotel Sherman. Mr. Bryan will discuss the general traffic situation, pointing out the correlation between troop movement problems and the transportation difficulties within the industry. An unusually large audience of members and guests is expected to hear this outstanding speaker.

The SAPEYES had an unusually interesting treat on July 16 when Fred K. Shankweiler, Chicago manager of the Cellulose Division of the Hercules Powder Company, showed the sales executives the new Hercules film, "Careers for Cellulose". The film, in technicolor and well equipped with sound, took about thirty minutes to run and portrayed the production of cellulose from the raw materials and reproduced the beautiful and useful plastic items which are a part of the future cellulose "career". Following the showing of the film, Mr. Shankweiler spoke briefly and answered a number of questions concerning the use of cellulose.

The SAPEYES will gather on August 8 at Olympia Fields for their second and final golf outing of the year. According to Jim Sensenbrenner, golf chairman, an unusually good crowd is expected inasmuch as the usual final outing held in conjunction with the fall meeting of the NPTA has been cancelled for obvious reasons.

New Wrapping Product Announced

Of far reaching interest to the paper trade now and in the future is the announcement of a local company, the Reynolds Metal Company, that it has perfected a new transparent wrapping film similar in appearance to cellophane for which the company claims unlimited possibilities for postwar packaging.

The film is moisture-proof, can be sealed by heat, doesn't deteriorate from sunlight, has considerable elasticity, dimensional stability and according to the makers does not support combustion. The Chicago concern plans to market the plastic film for wrapping all kinds of groceries, fresh frozen foods, citrus fruits, cigarettes and retail dry goods.

Planning its expansion in the plastic materials field, the Reynolds Metal Company has bought three acres to add to its Gary plant and is adding much new equipment. Much of its impetus in the field is being provided through a new wrapping that has already proved its practicability as a heavy, heat sealing, moisture proof war packaging material used by the military.

The new film is made from polyvinyl chloride, although its makers say it can be manufactured as well from styrene or other resins. The thickness of the film can be controlled to the finest degree and the film can be wax coated to make it water repellent but still retain its transparency. The new film will eventually be marketed at a price similar to that of cellophane when mass production begins in full although, according to E. M. Kratz, head of the company's plastic division, it may be more expensive when first available. Production will begin in the very near future.

One School's Salvage Record

As some indication of the force behind Chicago's waste paper salvage drives, one school this week turned over 7000 pounds of waste paper to the committee as its share for the first week of a new three week paper salvage drive. The playground pupils of this one school collected 20,000 pounds of paper in the first summer campaign which ended last week!

Bulkley Dunton Not in Conway Building

Earlier reports that Bulkley, Dunton & Co. intend to open an office in the Conway Building are entirely without foundation in fact.

Powell Valves
comin' through

Every day thousands of valves of all types, designs and materials are "comin' through" the various stages that make the name "Powell" on a valve the hallmark of quality. Into every step—from perfect casting to final merciless testing—goes the KNOW-HOW of 99 years of concentration on making valves—and valves only—for industry.

When they are finally pronounced worthy in every detail to bear the Powell name, they go out to join the hundreds of thousands of their family who are "comin' through" with flying colors under all kinds of service conditions in every branch of American industry.

1453

457

1469

171

Fig. 457—125-pound All Iron Globe Valve with flanged ends, outside screw stem, bolted flanged yoke and regrindable, renewable iron disc.

Fig. 1469—125-poond All Iron Quick Opening Gate Valve with flanged ends, sliding stem and bolted flanged yoke.

Fig. 171—150-pound All Iron Globe Valve with screwed ends, union bonnet and regrindable, renewable iron disc.

Fig. 1453—125-pound All Iron Gate Valve with flanged ends, outside screw rising stem, bolted flanged yoke and taper wedge double disc. Also available with solid disc—Fig. 1816.

The Wm. Powell Co., Cincinnati 22, Ohio

POWELL VALVES

Newsprint Supply Outlook Appears Confused

Increased Shipments of Print Paper to U. S. Dependent Largely Upon Larger Canadian Output—Labor Situation is Acute—Quebec Forestry Department Has Surplus — Other Industrial News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 23, 1945—With the program for increased shipments of newsprint to the United States totaling 220,000 tons a month now in effect, the outlook is not at all clear, and evidence accumulates that the plan represents, as was stated by the U. S. Newsprint Advisory Committee in announcing it, "the utmost extension of the already extended Canadian efforts."

Attention is now being directed here to reducing the quantity of pulps produced on newsprint machines. Some progress is already reported in relief from overseas shipments through quantities of Northern European newsprint, pulp and other forest products becoming available in the general European theatre. From Britain it is reported that arrangements have been completed to import substantial quantities of wood pulp from Sweden for paper-making, and it is further reported that esparto grass for paper-making is also to be imported from North Africa.

Effect of Overseas Shipments

Total Canadian shipments of newsprint overseas in June were 32,610 tons, as compared with 33,278 tons in June, 1943, by far the largest portion going to places other than Europe a total of between 9,000 and 10,000 tons being credited as shipped for relief of liberated countries in Europe. The comparative effect of relieving Canada from supplying European demands, so far as newsprint is concerned, may be judged from overseas shipments for the year 1944, figures for which have now been released in conformity with censorship regulations.

Total overseas shipments of newsprint in the calendar year 1944 amounted to 396,816 tons, as compared with 265,597 tons in 1943. Of this total of 396,816 tons, however, only 61,689 tons went to the United Kingdom, continental Europe and the Mediterranean area, the remainder being destined for Africa, India, Australasia and South American centres.

Labor Situation Still Acute

Important features cited by the U. S. Advisory Committee were "the improving labor situation in Canada" and the fact that the total pulpwood cut for the producing year 1944-45 is estimated at 7,420,000 cords, the largest pulpwood cut in Canada's history. However, "the improving labor situation" is not continuing. From all the pulp and newsprint manufacturing centres come reports of continuing labor shortage. In fact, in every phase of Canadian industrial life the labor shortage is acute, and indications are that there is every possibility that the authorities have been justified in warning that the worst labor shortage of the war years is developing. In this connection it is significant that the Government has just launched an intensified national housing campaign, giving extensive labor and material priorities to the construction industry, and that the bottleneck of the whole program is supplied by lumber, the shortage of which is so acute that manufacturers are shipping supplies direct as they come from the sawmills—a situation that directly affects the pulp and paper industry.

Another feature is acute transportation difficulties in respect both to ocean, lake and river shipping and rail communication, the result of the movement of many thousands of troops and of war supplies from Europe to this continent and to the Far East.

All in all, the difficulties facing the industry are many, but just as during the whole of the war years, the feeling is that somehow the industry will deliver the goods, as it always has, "come hell or high water." The conviction expressed by the U. S. Advisory Committee, in announcing the increased shipments to the U. S., still holds good. It said: "Nevertheless, in some manner the goal will be achieved, although we should warn that there may be some delay in shipments which will not extend beyond the fourth quarter."

Water Conditions Above Normal

An encouraging feature of the outlook is that a plentiful supply of water power for the balance of the season now appears assured in every centre of pulp and paper manufacture. Stream flow conditions across the Dominion are reported by the Dominion Water and Power Bureau as close to or above normal and substantially above normal in Nova Scotia, southern New Brunswick and southern Ontario. Flow of 21 representative rivers throughout the Dominion averaged 136 per cent of normal in June, as against 106 in May, and reserve of water in storage on the principal power producing rivers remained satisfactory. There have been substantial rainfalls throughout the Dominion during the present month, further replenishing the rivers and incidentally reducing the hazards of forest fires.

Private Ownership Disappearing

Much interest has been shown here in the fact that the Ottawa Journal Publishing Company, which publishes the Ottawa Journal and the Ottawa Farm Journal, has put 33,000 no par value common shares on the market, thus bringing to an end the private ownership of the company, which dates back to 1885. Both its publications circulate extensively in the eastern Ontario and western Quebec field, and The Journal is one of the most widely-quoted newspapers in Canada.

This development is part of a movement becoming general in Canada, and is brought about by the growth of succession duties. These duties have to be paid in cash, and the sale of shares permits capital to be built up to meet this contingency without embarrassment in case of death of a proprietor or partners. Among the larger newspapers still remaining in private ownership are the Star Publishing Company of Montreal, which publishes the Montreal Daily Star and a farm journal of Dominion-wide circulation, the Weekly Star and Family Herald. Both these journals were founded by the late Lord Athelstan and are now in the ownership of J. W. McConnell.

WAR RECORD PROVES PERFORMANCE...FOR HEAVY-DUTY DRIVES

Thousands of Diesel-driven craft of many types have been equipped with Fawick Airflex Clutches. Without a single exception these ships are more effective, through greater maneuverability and more dependable performance under battle conditions.

The proved advantages and economies of the Fawick Airflex Clutch are now available for all industrial equipment that calls for heavy service clutches, brakes, slip clutches and power take-offs.

Airflex is the only clutch that controls torque by air pressure—without springs, levers or toggles. Direct or remote control. No adjustments to make—no lubrication required. Misalignment presents no problem. Maintenance costs unusually low.

Let us *engineer* the Fawick Airflex Clutch to your machines. Book on request.

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Col. Kruger Seeks Paper for So. Africa

VANCOUVER, B. C., July 26, 1945—Executives of the pulp and paper industry in British Columbia were recently the guests at a luncheon tendered by Pacific Mills Ltd., Vancouver, in honor of Col. J. J. Kruger, paper controller of South Africa; C. B. Pearce, trade adviser to the paper controller, R. S. Baker, secretary of the paper control administration; and A. N. Satterthwaite of New Zealand, representative there for Pacific Mills Ltd.

Col. Kruger heads a three-man commission which is seeking paper to relieve the acute wartime shortage of this commodity in South Africa. The Colonel said South Africa had had to scramble all over the world for paper and Canada was the only country which had been able to provide a supply. He expressed belief that the business between South Africa and Canada in paper, which had existed before the war, would be continued on an increased scale in the years of peace as the result of the closer and more friendly relationship which had been established during the war.

Col. Kruger, who was formerly king's printer in South Africa, told the guests at the luncheon of many adventures with mobile printing units, letter press and lithograph as this equipment had followed the forces into Kenya and then into Italy and Europe. A million maps a month and other printed material were turned out on paper sent from Canada, said the colonel. Mr. Baker and Mr. Pearce also paid tribute to the vitally important aid given by Canada's paper industry.

"It was more than business, it was good fellowship," added Mr. Satterthwaite, speaking for New Zealand. Orders were kept continually filled, despite the fact that cargoes were being sunk.

New Zealand also hoped to receive larger paper supplies from Canada after the war. The Dominion had long placed dependence on Canadian mills.

Harry Pim, vice-president and sales manager of Pacific Mills, welcomed the visitors.

Following the luncheon in Vancouver the South African visitors made a trip to the Ocean Falls plant of Pacific Mills. From Vancouver they proceeded to Washington, D. C., en route to Britain.

NEPSCO Accepts Bid on Mills

BOSTON, July 14, 1945—Directors of the New England Public Service Co. have accepted the bid of $15,839,000 made by the First Boston Corp. and Coffin & Burr for the holdings of NEPSCO in New England Industries, Inc.

The acceptance is subject to approval by stockholders and the Securities and Exchange Commission.

New England Industries, Inc., controls five Maine cotton mills, Androscoggin Mills, Bates Manufacturing Co. of Sago, and Edwards Manufacturing Co. of Augusta, and also the Maine Seaboard Paper Co. of Bucksport.

Marinette Co. Mill Opens

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., July 23, 1945—Operations were started this week at the Marinette Paper Company, a branch of the Scott Paper Company, with a large force. The mill has not been used since it was abandoned by the International Paper Company in 1942 and prospects for steady work are good. Sufficient orders to guarantee steady operations are on hand.

Modify Limit on Small Books

WASHINGTON, D. C., July 19, 1945—Publishers who issued a greater tonnage of less-than-32-page school work books, educational tests and juvenile books in 1941, 1943 or 1944 than they did in 1942 (the base year under the book order L-245) are given increased paper quotas by amendments to Order L-245 and the commercial printing order (L-241) just issued, the War Production Board announced today. The additional tonnage is provided under the "Miscellaneous Publications" paragraph of Schedule II to Order L-241, and hence must be charged against the paper quota of the printer as well as the publisher under that order, WPB's Printing and Publishing Division explained. The amendment does not require book publishers to recalculate their regular quotas under Order L-245, but merely gives qualifying publishers additional rights under the "Miscellaneous Publications" provisions of Order L-241, WPB pointed out. This additional quota may be used for any type of "Miscellaneous Publications", as defined in Schedule II of Order L-241, as well as for less-than-132-page school work books, educational tests and juvenile books. Moreover, this additional tonnage must also be charged against the commercial printer's quota in accordance with Schedule II to Order L-241. Reference to the detailed instructions contained in this schedule must be made by all those desiring to use the benefits of the amended order, WPB officials emphasized.

The amendment to Order L-245 also exempts book publishers who use 10 tons or less per year from the provisions limiting the tonnage of paper that may be accepted during the third quarter of 1945. The full amount of 10 tons may be accepted in that quarter if the publisher so desires.

Quebec Forestry Department Has Surplus

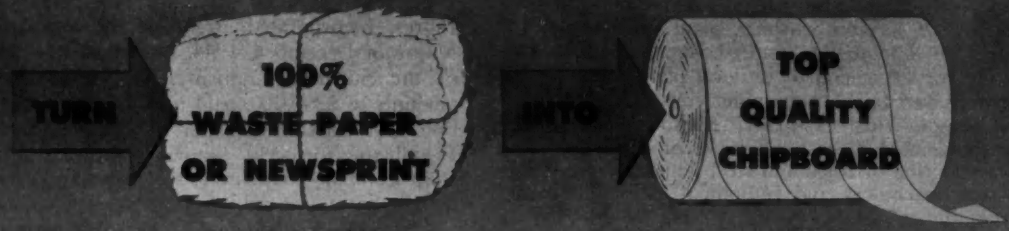
The Quebec Department of Lands and Forests reports a surplus of $4,000,000 of revenue over expenditure for the year 1944. The revenue was $6,404,005 and the expenditure $2,427,735. The forestry industry in the province employed 72,419 men in the year, to whom $76,565,643 was paid in wages. During the year the protection section of the department reported 699 forest fires, which destroyed 48,305 acres of timber, 20,691 more than the preceding year. During the year the Department supplied equipment and insecticides to the Dominion Agricultural Department, which are now being used in an experiment which the federal government is conducting in Quebec and Ontario in spraying forest areas with DDT from airplanes in an effort to destroy the spruce budworm, which has damaged or destroyed more than 40,000 square miles of forests in eastern Canada. The plots in Quebec in which the experiment is being tried are in the Kobanga area. Reports on the experiments are promised later.

Plans New Forestry Laboratory

[FROM OUR REGULAR CORRESPONDENT]

SYRACUSE, N. Y., July 23, 1945—Several new buildings at the State College of Forestry will be used as a paper and plastics laboratory, a wood products laboratory, and to house administration mapping and silviculture divisions. The structures are to be built as part of the state's post-war program and were described to the board of trustees this week. Announcement was made that the project would cost in excess of $800,000.

Don't let the kraft shortage stop you . . .



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● If you're having difficulty in getting reclaimed kraft fibre for chipboard production, here's an effective remedy:

Make your V-2s stock from newsprint or waste paper treated with UFORMITE 467... The resultant sheet will show greatly improved wet and dry strength, increased rigidity and lower water absorption.

This ability of UFORMITE 467 to improve low grade chipboard — *using 100% waste paper*—is shown graphically in the table below based on recent mill trials. The remarkable improvements effected in the .024 inch stock —300% increase in wet Mullen, 450% in wet tensile, 44% in dry Mullen and 37% in dry tensile...are of vital significance to the chipboard manufacturer.

Results like these can be achieved *at low cost* with UFORMITE 467. This urea formaldehyde resin is added *directly* at the beater. No changes in the usual production technique are involved...no pretreatment required...no extra equipment needed.

If you are making map or chart paper, toweling, bag stock or other types where wet strength is important, investigate UFORMITE 467. Samples will be sent upon request, and our technical staff gladly will assist you in its use.

FURNISH:

.024 and .038 Inch Chipboard—Non-Wet Strength

(A) FILLER STOCK	(B) LINER STOCK
Waste Paper	Waste Paper
7% Asphalt Emulsion (solids)	1.75% Plasticized Size XL20C
3% Alum	3% Alum
pH 4.5 at Beater	pH 4.5 at Beater
pH 5.5 on Machine	pH 5.5 on Machine

.024 and .038 Inch Chipboard—Wet Strength

(A) FILLER STOCK	(B) LINER STOCK
Waste Paper	Waste Paper
7% Asphalt Emulsion (solids)	1.75% Plasticized Size XL20C
3% Uformite 467 (solids)	3% Uformite 467 (solids)
3% Alum	3% Alum
pH 4.5 at Beater	pH 4.5 at Beater
pH 4.5 on Machine	pH 4.5 on Machine

The chipboard was combined with a conventional starch-urea formaldehyde resin adhesive.

PROPERTIES OF UFORMITE 467-TREATED CHIPBOARD PLY MATERIAL COMPARED WITH REGULAR MILL PRODUCTION JUTE LINED CHIPBOARD

MATERIAL		MULLEN Dry	MULLEN Wet[1]	MULLEN %	TENSILE Dry	TENSILE Wet[2]	TENSILE %	IMMERSION[3] NO.
0.024 inch chipboard	Untreated	70	12	17.2	2,028	180	8.8	260
	Treated with 3% UFORMITE 467	101	47	46.5	2,781	996	35.8	200
0.038 inch chipboard	Untreated	98	39	40.0	1,890	570	30.2	230
	Treated with 3% UFORMITE 467	133	71	53.0	2,029	1,227	59.7	185

[1] Immersion in water, 24 hours, 8 x 10.5 inch specimen. [2] Immersion in water, 48 hours, 0.59 x 6 inch specimen.
[3] Gain in weight of 6 x 6 inch specimen after immersion in water for 10 minutes, expressed in cgs.

UFORMITE *is a trade-mark, Reg. U. S. Pat. Off.*

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THE RESINOUS PRODUCTS & CHEMICAL COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

33

Union Bag Plans $2,000,000 Addition

SAVANNAH, Ga., July 24, 1945—Design and construction of a pulp washing plant and power facilities for Union Bag and Paper Corporation, to provide for expansion of its local plant from 800 to 1000 tons per day, is now under construction by The Rust Engineering Company, Pittsburgh, Pa. The work, estimated to cost in excess of $2,000,000, includes erection of brick and steel pulp washing building with machinery and equipment, boiler house incorporating a 200,000 pound per hour steam boiler, coal bunkers and handling system; complete water treating plant; river water intake and pump house; new 7500 K. W. turbo generator; and auxiliary equipment.

The Savannah mill, one of the largest in the world, is a producer of paper and board, multiwalled bags, retail store and special bags. The new additions, scheduled for completion this year, will relieve equipment which has been operating at peak war loads as well as provide a more than 25 percent production increase.

Two lines of washers in the new pulp washing plant will have a potential capacity for 400 tons of finished product per day, while also supplementing the existing diffusers for washing pulp. The design of the high density storage tanks, permitting storage of a greater reserve supply, is a notable feature in the washer plant equipment.

The new boiler will be the ninth, and largest, fuel fired power boiler at the works. Water treating equipment and boiler feed pumps are incorporated besides coal handling facilities in the boiler house. One existing boiler is being converted to burning bark.

The water treating plant will treat all water for both power and recovery boilers. A new substation and pump room have also been provided. The river water intake and pump house will be constructed to provide circulating water to a condenser for the new 7500 K. W. turbine which will be installed to replace an old unit, which was purchased second-hand and installed as a war measure during the period of critical priorities.

Kletzien Joins Marathon

MENASHA, Wis., July 23, 1945—A. F. Kletzien has become associated with Marathon Corporation, where he will be in charge of the department of commercial research. He will make his headquarters at Menasha.

Mr. Kletzien is widely known in the paper and bakery industries having been connected with the paper business for twenty-five years, the last three as general manager of Saniwax Paper Company, Kalamazoo, Michigan. Prior to that he served as secretary-treasurer and controller of United Wallpaper Company, Chicago, Illinois and as secretary and controller of the Fox River Paper Company, Appleton, Wisconsin.

Southern Advance Appoints Kennedy

BOSTON, Mass., July 23, 1945—The Southern Advance Bag & Paper Company, Inc. has appointed W. C. Kennedy as sales representative of the firm in Metropolitan New York, New York state and western Pennsylvania. For the last twelve years Mr. Kennedy has been sales representative of Southern Kraft, a division of the International Paper Company, in Metropolitan New York. He takes the place of E. B. Foster.

Windham Fibres Will Produce Board

SOUTH WINDHAM, Me., July 16, 1945—Windham Fibres, Incorporated, organized by industrialists of Maine in December, 1944, has taken over the assets of the Supertex Company. The authorized capital amounts to $200,000, paid in $175,000. The Corporation first leased the paper and pulp mill at South Windham, formerly known as the Androsscogin Pulp Company. However, the property is now being bought from Central Maine Power Company.

The mill is partly built from concrete and partly from brick. It has approximately 163,000 square feet of floor space. Seven grinders of the pulp mill are directly connected with water wheels which develop about 1200 HP; also, two beaters are driven by water power, capacity 1200 pounds and 1,200 pounds each. All other machinery is driven by electricity. About a year ago, priorities were secured for this new equipment. It consists in the main part of a modern pulp refinining outfit, stock thickeners, agitating equipment, two double wet machines with variable speed and drying tunnels.

The starting product will be 10 to 12 tons of dense fibre board, primarily to be used in the shoe industry. It is contemplated to produce further types of board for various other branches and to increase the production first to 20 tons.

The officers of the corporation are as follows: George C. Soule, Maine Steel Inc., president; R. T. Burr, Bancroft & Martin Rolling Mills Co., vice-president; Gustav Machlup, treasurer and general manager.

Other directors are Robert Braun, E. C. Hyde, State Senator, George Morrill and Harvey Clark, all from Portland.

Blandin Sales Policy Is Unchanged

Earlier reports that the Blandin Paper Company, Grand Rapids, Minn. contemplated changes in its method of distribution are declared by informed authorities to be without foundation and erroneous. C. K. Andrews, vice-president of the Blandin company this week made the following statement:

We wish to deny categorically that any change has been made in our sales program or method of distribution as reported on page 21 of the PAPER TRADE JOURNAL issue of July 19. We will continue to maintain our Chicago office in the Conway Building and serve our accounts as in the past.

Huronette Brand Replaces Leatherette

Finding that the name Leatherette on its plate finish grade has been confusing with Port Huron cover (Leather Embossed) grade, the Port Huron Sulphite and Paper Company has renamed the former. Leatherette plate finish grade will be known hereafter as Huronette plate finish.

Sutherland Earns 96 Cents

The Sutherland Paper Company reports earnings of 96 cents per share net after taxes, or $277,141, for the six months ending June 30. This is compared to the $1.18 per share or $338,709 reported for the same period in 1944.

In gauging the potentialities of your future Far West operations . . .

count on Columbia for Alkalies

THROUGH recently acquired Pacific Coast facilities, Columbia brings to the great far west area the efficient and economical production of basic chemicals so beneficial to the entire industrial economy.

The rich alkali deposits at Owens Lake, California—consisting principally of Soda Ash, Borax and Sesqui-Carbonates—are an important addition to other Columbia resources. Their acquisition is characteristic of the progressive policy which seeks to anticipate the growing requirements of customers to the greatest extent possible.

For complete information on our ability to serve your operations in the far west—present or contemplated—you are invited to consult our General Offices, or the most conveniently located District Office.

COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY
COLUMBIA CHEMICAL DIVISION
GRANT BUILDING • PITTSBURGH 19, PA.

CHICAGO • BOSTON • ST. LOUIS • PITTSBURGH • NEW YORK • CINCINNATI • CLEVELAND
PHILADELPHIA • MINNEAPOLIS • CHARLOTTE • LOS ANGELES

Glidden Broadens Duties of Two

CLEVELAND, O., July 23, 1945—With 26 coast-to-coast units now comprising its diversified industrial team, The Glidden Company, general headquarters Cleveland, announces two important personnel changes necessitated by growth.

W. J. O'Brien, vice-president, who has been in general charge of manufacturing, becomes chairman of the firm's Research and Manufacturing Committee and assumes administrative charge of the Chemical and Pigment Division, including plants at St. Helena, Maryland, Collinsville, Ill., and Oakland, Calif. He will also administrate Metals Refining Company Division, Hammond, Ind., the Euston Lead plant, Scranton, Pa., the Naval Stores Division, principal plants in Jacksonville, Fla. and Valdosta, Ga., and the company's mining interests.

P. E. Sprague, who has been vice-president in charge of sales for the Chemical and Pigment and Soya Products Divisions becomes vice-president in charge of administration of the Soya Products Division, Chicago, and the Feed Mill Division, Indianapolis.

Edwin Letts Oliver Becomes an LL.D.

On June 23rd at the commencement exercises, the University of California bestowed the degree of Doctor of Laws (LL.D.) on Edwin Letts Oliver, President of Oliver Filters Inc. The citation accompanying the award reads as follows:

> "Graduate of our College of Mining in the class of 1900; noted for his invention of the filter bearing his name, valued for its utility in metallurgy, chemistry and general industrial fields; one whose activities have been carried on not only in the United States but in other lands as well; a loyal alumnus of the University, devoted to its well-being, man of far-flung interests, resting on the foundation of his own inventive genius".

This degree is a fitting award to a man who has contributed so much to industrial progress.

Neoprene Latex Prices Down, Supply Up

WILMINGTON, Del., July 24, 1945—The Rubber Chemicals Division of E. I. du Pont de Nemours & Company today announced price reductions averaging thirty per cent in several types of neoprene synthetic rubber latex.

The new price schedule is effective beginning with shipments leaving the Deepwater, N. J., plant July 26, just a year after the last neoprene price reduction, posted July 25, 1944. It brings the principal neoprene latex, known as Type 571, down to 25 cents a pound, dry weight basis, in tank car lots, or 28 cents in drums in car lots. Price cuts on other types range from 24 to 33 per cent.

O'Neill Presides at Annual Dinner

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., July 23, 1945—Frank O'Neill, president of Paper Manufacturers Company, presided as toastmaster for the evening at the annual PMC Bowling League dinner, and handled it with his usual flair for doing things in top-flight style. Frank expressed the hope that the friendliness which the Thursday evening get-togethers had brought about be continued and that the league would continue to expand.

Service Pins Feature Rumford Clambake

RUMFORD, R. I., July 23, 1945—The annual clam bake of Rumford Chemical Works on July 27th will be featured this year by the presentation of service pins to 203 men and women of "The Rumford Family". Longest in length of service are Christopher Cute who will receive a 60-year pin and Fred L. Thayer who has a continuous record of over 55 years. Four others will be awarded 45-year pins and nine will get 40-year insignia. Albert E. Marshall, president of the company since 1938, will receive a 5-year pin. Average length of service of those eligible for pins in recognition of 5 years or more service is 19 years, testifying to the steady, established artisanship of this company which introduced baking powder in America 86 years ago.

The clam bake, a yearly feature at Rumford Chemical Works, begins with clam cakes at luncheon and rounds out the afternoon with a typical Rhode Island clam bake with its varied menu of such items as steamed clams, fish, corn on the cob, and baking powder biscuits.

Synkrete Hardens Concrete Floors

Many industrial plants, troubled by dusting cement floors, are eliminating this menace during reconversion. While equipment is being changed or shifted, it is a simple matter to treat the offending floors with a new, fast acting liquid that quickly eliminates dusting at the source.

Known as Synkrete, this product of the Synthex Products Co., 2 West 45 Street, New York City, is a concentrate that is diluted with three parts water before use. It is then applied by brush mop, or sprinkler to saturate an area. It penetrates deep to fill the pores and reacts with the cement to harden into a rock-like, impenetrable mass.

Synkrete dries in a few minutes, so that floors remain usable, although reaction is not complete for several days. A single application is sufficient to allay dusting although two or three at twenty-four hour intervals are recommended for lasting results.

It can be applied over worn painted as well as unpainted floors. It is an excellent sizing after the reaction is complete, and floors, which are painted two to three weeks after treatment, will have far less tendency to peel or blister than unpainted floors.

N. Y. Waste Collections Drop in June

Waste paper collected in the five boroughs of New York City and shipped by rail and truck to the consuming mills during June totaled 65,591 tons, it was revealed here this week by Lewis S. Greenleaf, Jr., regional director, War Production Board, New York City. Although this waste paper collection figure represents a drop of 7,000 tons from the May 1945 total, it compares favorably with total collections of 71,691 tons of waste paper processed to the mills in June, 1944, when the waste paper losses of the two V-E Days are taken into consideration as well as a general seasonal slackening in collections.

Mr. Greenleaf stated that the waste paper collection figures, when compared with the amount of waste paper available for salvage, indicates outstanding results. As a result of the salvage efforts of housewives, children and the major civilian guiding groups in this activity, the flow of waste paper has been increased in the face of a constantly diminishing supply of recoverable paper.

EVAPORATORS-CONDENSERS-FILTERS

One frequently neglected source of economy that is particularly adaptable to post-war plant improvement is the use of a surface Condenser on a multiple-effect Evaporator.

The use of a low-cost surface Condenser makes possible the conversion of low temperature heat, usually wasted, to the heating of wash waters.

The services of Goslin-Birmingham's Reconversion Department are available for the study of your individual plant problems. A thoroughly-trained, experienced staff of engineers fully abreast of current conditions and post-war operational methods, stands ready to serve you.

[redacted]

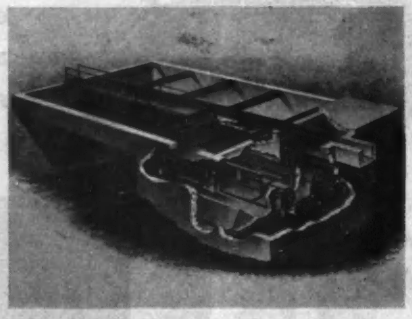
To remove dark spots from your paper— Permutit* Water Conditioning Equipment

You can improve the quality of your paper by purifying the water you use! Those dark spots and speckles that mar so many paper mill products may be caused by dirt and iron in *process* water.

Permutit Water Conditioning Equipment, such as the Spaulding Precipitator shown at right, removes these impurities . . . gives you complete control of water quality.

If you have a water problem (where is the pulp or paper mill today that *hasn't!*), take it to the world's largest manufacturer of water conditioning equipment. The Permutit Company, Dept. I2, 330 West 42nd St., New York 18, N. Y., or Permutit Co. of Canada, Ltd., Montreal.

*Trademark Reg. U. S. Pat. Off.



PERMUTIT WHITE WATER RECLAIMER—Recovers fibre and filler more completely than *is* possible with any other type of equipment, permits re-use of water.

PERMUTIT

WATER CONDITIONING HEADQUARTERS

In actual service—under various conditions—in a great number of mills—over a long period of time—Heppenstall E.I.S. chipper knives have conclusively demonstrated their ability to show a unit cost below any other chipper knife on the market . . . In fact, we *guarantee* them to do exactly that. What stronger possible reason could you have for using them? Write for prices. HEPPENSTALL COMPANY, PITTSBURGH 1, PA.

Heppenstall

E. I. S. CHIPPER KNIVES

Expects No Sharp Increase in Paper

There will be no sudden increase in United States paper production resulting from the resumption of deliveries of pulp to this country by Swedish pulp manufacturers, according to E. W. Tinker, Executive Secretary of the American Paper and Pulp Association. Several factors will operate against a radical upswing of paper production. Among these are:

1. The industry is already operating at a high ratio of production to capacity using domestic and Canadian pulp. The paper manufacturers are operating at about 90% of estimated capacity and the paperboard manufacturers' rate is over 95%.

2. Domestic pulpwood receipts and inventories are precariously low in some regions, especially the important Northeastern region.

3. Pulp inventories are dangerously low and will absorb several hundred thousand tons of pulp before they can be called normal.

4. It will take some time for an appreciable volume of Swedish pulp to reach this country with presently available transportation facilities.

5. Shortages of other non-fibrous raw materials are threatened. Rosin size is critical at the moment and may become dangerously short unless satisfactory substitutes are developed.

6. The labor shortage in the mills and in the woods has by no means been overcome. The threatened withdrawal of German prisoners of war from wood harvesting next fall poses a real problem, especially in the great Southern paper industry.

7. Increased pulp supplies when available may be required to restore prewar bases of weight without increasing the yardage made.

"These are some of the problems which face this industry," Mr. Tinker said. "The amazing resourcefulness of the American paper manufacturers has surprised many, and this resourcefulness has by no means deserted them. But, in my opinion, it is asking the impossible to expect restoration of prewar qualities and a continuous rate of production at 100% of capacity to result immediately upon the arrival of a few boatloads of Scandinavian pulp."

RESTRICTIONS LIMIT SCANDINAVIA

(Continued from page 9)

South America. Even if the Scandinavians had tonnage to spare for this market, it is hardly likely that any tonnage would come here as the OPA prices are so far below the prices prevailing in the Scandinavian market at the present time, the Scandinavian producers would actually have to take a substantial loss to supply American publishers and there is no good reason why they should do this now.

Mr. Dauman's conclusions regarding Finland were that little, if any pulp or paper supplies from that source could be anticipated even for 1946 and he was very pessimistic regarding the long term prospects for shipments from that country. It is generally known that nothing will be shipped from Finland to the United States till the very end of this year and the possibilities of late 1945 deliveries are meager inasmuch as it is understood that if Finland is able to forward any of this merchandise it will go to England first, he stated, having learned that Russia has taken away most of the Finnish transportations facilities and, it is understood, will take much of Finland's exportable surplus for consumption in Russia.

Contact with Norway was quite difficult, but based on statements by leading Norwegians Mr. Dauman reported that it will take a long time before the Norwegian mills can discuss export business in pulp or paper. They are lacking pulp wood, coal, chemicals, transportation facilities, etc. to a great extent and besides, the requirements of the Norwegian paper mills are expected to absorb most of Norway's pulp production. It is even expected that Norway will buy fairly large quantities of pulp from Sweden under trade agreement. Considering the necessity for Norway to obtain maximum prices for its products, it was presumed that the American market would not be tempting enough.

Gottesman & Company, Inc. represent the following producers of Swedish and Norwegian pulp in the United States, and the pulps they produce are: Dynas Aktiebolag, Weija, strong unbleached sulphate; Hylte Bruks Aktiebolag, at Rydobruk, strong unbleached sulphite pulp; Aktiebolag Hogfors Trasliper, Haggenas, dry ground wood; Aktiebolaget Iggesunds Bruk, Iggesund, bleached, easy bleaching and unbleached sulphite and sulphate pulps and dissolving pulp; Munksjo Aktiebolag, Aspa Bruk, strong unbleached sulphate; Oskarstrom Sulphite Mills Aktiebolag, Oskarstrom, strong and easy bleached unbleached sulphite; Stroms Bruks Aktiebolag, Stromsbruk, bleached sulphite and dissolving pulps; Svano Aktiebolag, Svanobruk, strong unbleached sulphite; Wifstavarfs Aktiebolag, Fagervik and Wifstavarf, strong unbleached sulphate pulp and strong unbleached sulphite pulp; Wikmanshytte Bruks Aktiebolag, Thurbo, bleached sulphite and dissolving pulps; Aktieselskapet Saugbrugsforeningen, Halden, Norway, bleached sulphite and dissolving pulps.

The officers of Gottesman & Company, Inc., which was established in 1886, are: D. Samuel Gottesman, president; Arthur J. Sigel and Samuel Dauman, vice-presidents; Ben I. Sheldon, treasurer; Jerome J. Altman, assistant treasurer; B. Emanuel, secretary.

Brown Paper Mill Promotes T. R. Moore

MONROE, La., July 23, 1945—T. R. Moore, who has been connected with the Brown Paper Mill Company, Inc., for the past twenty-one years, has been elected vice-president and general manager. Mr. Moore is familiar with all phases of our operations and management since, prior to his election to fill the post vacated by M. C. McDonald, he was technical director of the Company in direct charge of integrated pulp and paper mill operations. Mr. Moore for several years has been an active member of the American Institute of Chemical Engineers and has been a member of Tappi since 1935. He is also a member of the A.P. & P. Mill Superintendents Association and is well known throughout the Kraft industry.

Bartram Plans $200,000 Addition

VANCOUVER, B. C., July 19, 1945—Bartram Paper Products Company, Ltd. is planning to erect a $200,000 addition to its paper bag manufacturing plant at Vancouver, B. C. The addition will provide employment for an additional 100 workers and will be used in the production of paper products. The plant will be erected in the block between Franklin and Hastings Sts., Woodland and McLean. Delay in starting the project is being experienced, however, because the Vancouver City Council is hesitating to grant the firm's application for the purchase of the land dividing its property in this city block. If the lane could be purchased by the company the new building could be joined up to the present factory.

SUTHERLAND

continuous BEATING AND REFINING SYSTEM

During the two years of war emergency, when all metals were critical, every one of the 70 Sutherlands in the United States kept running without shutdown for repair parts; proof of quality in design and precision construction.

SUTHERLAND PAPER COMPANY

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending July 21, 1945

STOCKS

	High	Low	Last
A. P. W.	6¼	5⅞	5⅞
Armstrong Cork Co.	45⅝	43⅜	43⅝
Celotex Corp.	16¾	15⅞	16⅛
Celotex Corp., pf.	21	20¼	21
Certain-Teed Products Corp.	10½	9¾	10
Certain-Teed Products Corp., pf.	160	159	159
Champion Paper & Fibre Co.	35	32	32½
Champion Paper & Fibre Co., pf.	112	110¼	110½
Congoleum Nairn Co.	29⅝	28½	28½
Container Corp. of America	29	27⅝	29
Continental-Diamond Fibre Co.	12¾	12¼	12½
Crown-Zellerbach Co.	22¾	21¾	22
Crown-Zellerbach Co., pf.	104	103¾	104
Dixie Cup Co.	27¼	26¾	26¾
Dixie Cup Co.—A	49	48	48¼
Flintkote Co.	28⅛	27⅛	28
Flintkote Co., pf.	108⅛	107	108½
Robert Gair	6⅜	6	6¼
Robert Gair, pf.	18	17¾	17⅞
International Paper Co.	27¼	25	25⅝
International Paper Co., pf.	99⅞	97¼	97½
Johns-Manville Corp.	120½	115	118½
Johns-Manville Corp., pf.	...	...	...
Kimberly-Clark Corp.	45¾	45½	45¾
Mac Andrews & Forbes	33⅛	33⅛	33⅛
Mac Andrews & Forbes, pf.	...	...	...
Masonite Corp.	43½	42¾	42¾
Mead Corp.	15⅛	14⅛	15⅛
Mead Corp., pf. A—6%	104	104	104
Mead Corp. pf., B—5½%	102	100	102
National Container Corp.	15½	15	15¼
Paraffine Companies, Inc.	66	65½	65½
Paraffine Companies, Inc., pf.	...	...	...
Rayonier, Inc.	20	19	19⅛
Rayonier, Inc., pf.	36⅝	36	36
Ruberoid Co.	36½	35⅝	35⅝
Scott Paper Co.	51½	48½	51½
Scott Paper Co., pf.	112	111½	111½
Sutherland Paper Co.	34	34	34
Union Bag & Paper Corp.	17	16½	16⅞
United Paperboard Co.	7⅞	7⅝	7⅝
U. S. Gypsum Co.	89½	87½	89
U. S. Gypsum Co., pf.	191¼	190¼	191¼
West Virginia Pulp & Paper Co.	29¾	28⅛	28½
West Virginia Pulp & Paper Co., pf.	112	112	112

BONDS

Abitibi Pulp & Paper Co. 5s '53	101⅞	100¾	100½
Celotex Corp. 3¾s '55	...	...	...
Certain-Teed Products Corp. 5½s '48	...	...	...
Champion Paper & Fibre Co. 4¾s '50	...	...	...
International Paper Co. 6s '55	108½	108½	108½
International Paper Co. 5s '47	104⅞	104⅜	104⅜

New York Curb Exchange

High, Low and Last for Week Ending July 21, 1945

STOCKS

	High	Low	Last
Great Northern Paper Co.	40	38⅝	39½
Hummel-Ross Fibre Corp.	9½	8⅝	9
St. Regis Paper Co.	7¼	6¾	6⅞
St. Regis Paper Co., pf.	...	...	...
Taggart Corp.	6¾	6	6

BONDS

American Writing Paper Co. 6s '61	102	102	102

Order Hearings in Abitibi Plan

TORONTO, Ont., July 21—On application of N. T. Berry, on behalf of Roy S. McPherson, liquidator of Abitibi Power and Paper Co., G. D. Conant, master of the supreme court, has issued an order directing the liquidator to make an application before the supreme court of Ontario for an order summoning separate meetings of the several classes of the shareholders of the company to consider the reorganization plan recently propounded by the committee appointed by Premier Drew.

The committee consisted of Hon. Frank J. Hughes, chairman; William Zimmerman and Gilber E. Jackson. The order of the supreme court will be sought under the Companies' Act and the Companies' Creditors' Arrangement Act.

It is "a compromise arrangement under the statutes, between the Abitibi Power and Paper Company and the holders of the 7 per cent cumulative preference shares, the 6 per cent cumulative preference shares and the common shares," it is stated.

Papermill Unions Convene

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 23, 1945—The annual three-day convention of the Provincial Council of Papermill Unions, held this year in Quebec City, concluded on Saturday night with an official banquet at which the guest speakers were Lucien Bourne, mayor of the city, and Elliot Little, president of the Anglo-Canadian Pulp and Paper Company. The convention was attended by delegates from the 48 unions of the Maritime Provinces, Quebec and Ontario. One of the resolutions passed requested from the Quebec Provincial Government the complete abolition of the provincial sales tax, which makes a levy of 2 cents on the dollar on practically all retail purchases, food excepted.

J. Young of Gatineau, Que., was elected for a fifth term president of the paper manufacturers division. First and second vice-presidents were Gerard Lemay, of Buckingham, Que., and N. Lepage, of St. Jerome, Que. A. Hasty, of Three Rivers, was elected secretary.

In the division of pulp employes, Gerard Gravel of Quebec, was elected president, W. Jacobs, of Hawkesbury, Ont., vice-president, and Alex Nobart, of Hull, Que., secretary-treasurer.

Reservoir Levies Water Tolls

[FROM OUR REGULAR CORRESPONDENT]

MECHANICVILLE, N. Y., July 23, 1945—The annual assessments of the West Virginia Pulp & Paper Co. for the construction of the Sacandaga Reservoir show a levy of $240.67 in Schaghticoke, $8,752.32 in Mechanicville, and $8,306.19 in the town of Stillwater. Assessments for operations and maintenance show the company levied for $34.85, $1,267.35 and $1,202.75. Other manufacturing concerns in the county are also assessed. The reservoir was built several years ago by the Hudson River Regulating Board at an enormous cost and has already proven of great benefit to paper mills during drought periods. Mills formerly forced to close during low-water periods are now able to operate the entire year without interruption.

Expect Rushmore to Expand

NATURAL DAM, N. Y., July 23, 1945—Expansion of the tissue paper products of Rushmore Paper Mills, Incorporated with possible greater labor employment, appears possible with the sale of the International Lace Company plant which has been idle since last October.

Reports have been widespread the past several days that the former lace plant had been sold to Rushmore.

Charles Turner of Chester Lace Mills, Chester, Pa., owners, referred questioners to Rushmore officials for a statement. While not issuing any statement, the company admitted there was enough fact in the rumors to warrant publication.

Scott Votes 45 Cents on Common

Directors of Scott Paper Company have declared a quarterly dividend of 45 cents on the common, payable Sept. 12, to stock of record Aug. 31. Also, the regular quarterly dividends of $1.12½ per share on the $4.50 cumulative preferred shares and $1 on the $4 cumulative preferred shares were declared, both payable on November 1, to stock of record as of October 19.

Announcing

EMULSION AND LATEX STABILIZERS FOR THE COMPOUNDING OF SYNTHETIC AND NATURAL LATICES

* * *

Surface Active Agents (wetting, dispersing, stabilizing)

* * *

COMPOUNDED LATICES, SYNTHETIC & NATURAL GR-S, HYCAR AND NEOPRENE COMPOUNDS

* * *

COATING IMPREGNATING SIZING

* * *

A Complete Laboratory Service

TRADE AGCHEM MARK

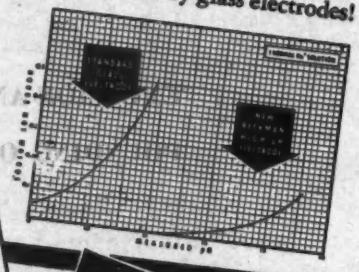
AGAWAM CHEMICALS INC., West Springfield, Massachusetts

Check your knowledge of pH

Do you know the answers to these important pH questions?

Q. *There is only ONE make of modern pH equipment with which accurate pH measurements can be made in highly alkaline solutions, even in the presence of sodium ions. Do you know what that make is?*

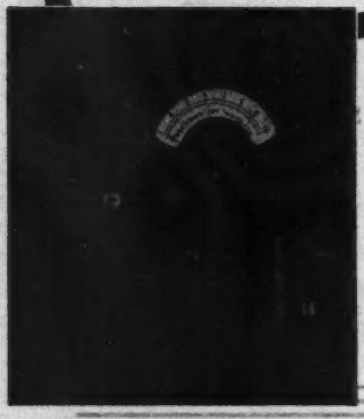
A. Beckman pH equipment—and *only* Beckman equipment! Note in chart the accuracy of Beckman Type E Glass Electrode in highly alkaline solutions compared with ordinary glass electrodes!



Q. *There is only ONE make of pH equipment with which glass electrode pH measurements can be made in boiling hot process solutions. Do you know the name of this equipment?*

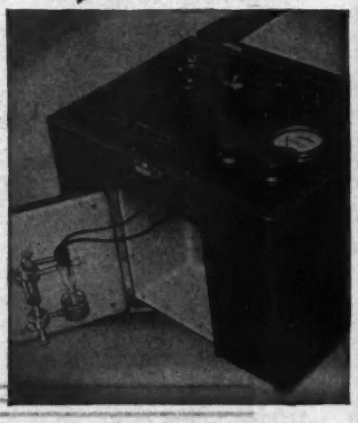
A. Again Beckman—and *only* Beckman! With Beckman High Temperature Glass Electrodes, continuous pH measurements can be made in solutions as hot as 100°C (212°F). This feature is highly important to consider in the purchase of pH equipment for *any* purpose. Even though your present operations may not involve hot solutions, you never know when changes or additions to your operations may obsolete equipment not providing this feature. Buy Beckman to begin with *and be sure!*

There's a Beckman pH instrument for your requirement.



Beckman Automatic pH Indicator
The most advanced pH instrument available for large-scale pH control. Indicates pH completely automatically. Also operates pH recording and control equipment!

Beckman Industrial pH Meter
Combines high accuracy with knockabout ruggedness for portable plant and field use. Gives instant pH readings at the touch of a button. Also *continuous* indication!



Beckman Laboratory pH Meter
Combines high precision with wide versatility to meet every laboratory and research need.

Free! "What Every Executive Should Know About pH"—a helpful factual guide to modern pH control. Send for your copy.

BECKMAN

BECKMAN INSTRUMENTS NATIONAL TECHNICAL LABORATORIES
South Pasadena 16, California

STRUMENTS CONTROL MODERN INDUSTRIES

ROLLS

"round and straight to within one-half of one ten-thousandth inch"

This reverse coating roll was ground to within 1/40,000 inch of absolute roundness and straightness. The initial checking by a Farrel Indicating Caliper was followed by two checks of 288 readings each on electromatic gauges under controlled temperature conditions.

Requests for rolls ground so close to absolute accuracy are a rarity in any roll shop. But the ability—that is, the experience, the facilities and the highly skilled personnel—for producing such rolls is *always* available in *America's largest specialty roll shop* at Ansonia, Connecticut.

Here there are casting pits large enough to accommodate rolls up to 36 feet in total length . . . an assortment of "chills" that make it possible to cast rolls from 5 to 72 inches in diameter and any face length up to 312 inches . . . special tools for machining . . . precision roll grinders of our own design . . . special calipering instruments for checking accuracy as finishing progresses . . . and engineers, founders and machinists with the necessary skill and experience to bring your specifications to "life".

When you need rolls, do as so many mills have been doing for nearly a century—call Farrel. *Write for information on rolls for specific applications or for details of any of the other products listed on this page.*

FARREL-BIRMINGHAM COMPANY, INC. • ANSONIA, CONN.

Plants: Ansonia, Derby and Stonington, Conn., Buffalo, N. Y.
Sales Offices: Ansonia, Buffalo, New York, Pittsburgh, Akron, Los Angeles, Tulsa, Houston, Charlotte

FARREL PAPER MILL MACHINERY

ROLLS: Chilled Iron, Dry Sand, Meehanite, Alloy Iron, Steel, Chromium-Plated
FOR: Calender Stacks
Board Calenders
Super Calenders
Glassine Calenders
Friction Rolls
Breaker Rolls
Smoothing Rolls
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Creping Rolls
Plater Rolls
Cutting Rolls
Paraffining and Waxing Rolls
Saturating Rolls
Siliconing Rolls
Miscellaneous Special Purposes

CALENDERS: Paper and Board
GRINDING MACHINES: Roll
CALIPERS: Roll
GEARS, CUT: Spur, Single and Double Helical (Farrel-Sykes Continuous Tooth Type)
SPEED REDUCING GEAR UNITS
SPEED INCREASING GEAR UNITS
FLEXIBLE COUPLINGS.

Farrel-Birmingham

FB-224

OPA Sets Blotting Paper Prices

WASHINGTON, D. C., July 23, 1945—Dollar-and-cent ceiling prices for manufacturers have been established on ten principal grades of blotting paper, the Office of Price Administration announced today. The specific ceilings, effective July 24, 1945, are at the general March 1942 "freeze" levels in effect heretofore.

The action, taken at the request of the industry, puts manufacturers' ceilings for blotting paper under the writing paper regulation. Previously, they had been under the General Maximum Price Regulation, which now will control only the retail sales of blotting paper. Wholesale ceilings continue to be established under the merchant regulations for fine papers.

Ceilings for the ten principal grades of blotting paper, at the manufacturing level range from $10 to $17.50 per hundredweight, for quantities up to 10,000 pounds; in standard packing, and delivered to points in Zone A, comprising all the eastern area of the country and part of the middle west.

Differentials are provided for quantities above 10,000 pounds, for special finishes, for cutting and banding, and for deliveries in other zones of the country. These differentials are in line with established practices.

Customary differentials will also be used in determining the ceiling prices for related grades of blotting paper.

Larson Joins Detroit Sulphite

DETROIT, July 19, 1945—Detroit Sulphite Pulp & Paper Company has appointed Dr. Leslie L. Larson to the position of technical director. Dr. Larson is a 1934 graduate of the University of Idaho and also a graduate of the Institute of Paper Chemistry, where he received his Ph.D. in 1940. He was formerly employed by Kimberly-Clark Corporation as Research Chemist and later was with the Edgewood Arsenal in the same capacity.

Will Study Scandinavian Newsprint

WASHINGTON, D. C., July 23, 1945—A special mission of newspaper publishers is being sent to Scandinavia for the Combined Raw Materials Board and the War Production Board to obtain the latest information on the present and future newsprint supply situation in the Scandinavian and other European countries, WPB announced today. The mission will be headed by J. Hale Steinman, director of WPB's Printing and Publishing Division. It will also include: William G. Chandler, president of the American Newspaper Publishers Association and chairman of its newsprint committee since 1931; Richard W. Slocum, general manager of the Philadelphia Bulletin and a former member of WPB's Newspaper Industry Advisory Committee, who was chairman of the newspaper publishers' raw materials salvage drive for WPB; and Dr. Gerard Larocque, technical consultant to the newspaper industry, serving as paper engineer to the mission.

The loss of newsprint production in the United States and Scandinavia as well as a world-wide shortage makes the need of obtaining adequate supplies of newsprint for the maintenance of a free press in the United States and liberated Europe a matter of vital concern to the press and the Government of this country, WPB said.

CRMB has recommended that supplies of newsprint for the liberated areas be obtained from Scandinavia so as to curtail the shipment of newsprint from North America to Europe.

SINCE 1828 — CONTINUOUSLY WE HAVE SERVED THE PAPER INDUSTRY.

The war is not over. But when it is over, will you be among the first to receive new equipment?

We can now book approved orders which will be filled in the order received.

Some will have to wait—so plan now to be the first.

Paper Bag Machines
Paper Machines Jordans
Paper Trimmers—new model E.

THE SMITH & WINCHESTER
MANUFACTURING COMPANY
PLANT AND OFFICES AT SOUTH WINDHAM, CONNECTICUT

The DEFIBRATOR-CHEMIPULPER

PRODUCING PULPS FOR MANUFACTURE OF DRY FELT BASE FOR SHINGLES

also for ROOFING

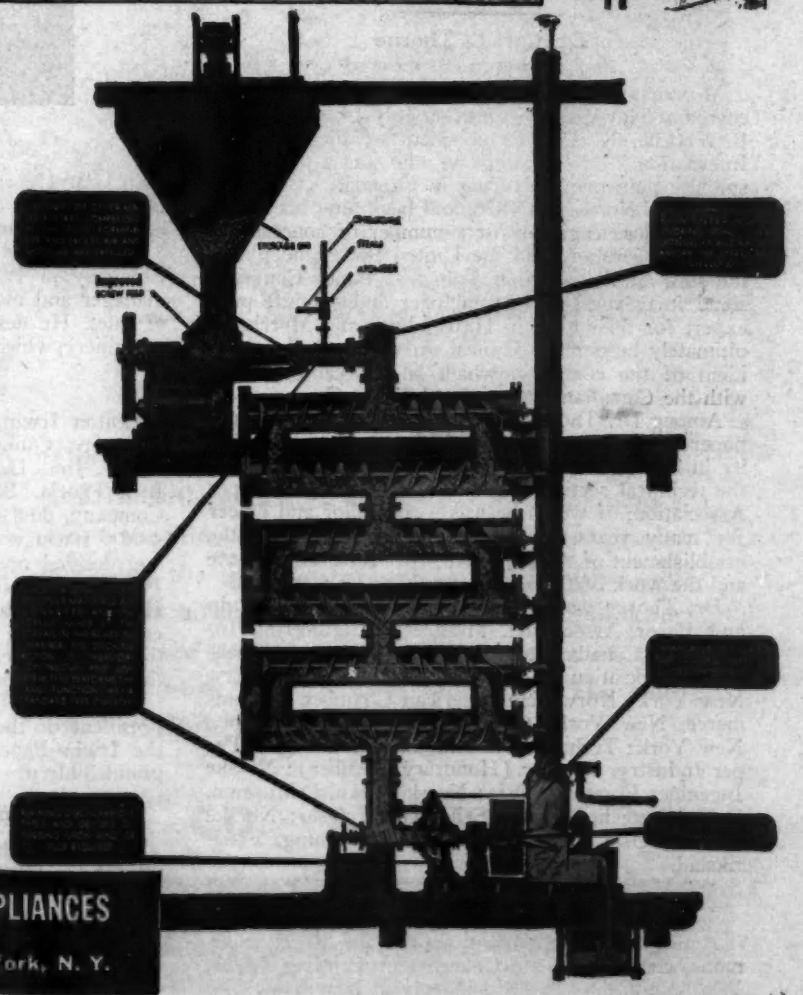
The Defibrator-Chemipulper produces a wood pulp which is employed as a substitute for rag fibre in the manufacture of roofing and flooring felts. While the wood chips are still in the Reaction Chamber and are in a softened condition they are defibered. This produces a long, free fibre which gives softness and bulk.

The Defibrator-Chemipulper will economically process various kinds of wood, wood waste, straw and bagasse for the production of high yield pulps for manufacturing such products as insulating board, hard board, 9 point for corrugating, paper and paper board.

Commercial test runs and our laboratory facilities are at your disposal. Literature giving further particulars mailed upon request.

Combining the ASPLUND DEFIBRATOR and B-K REACTION CHAMBER.

Patented and Patents Pending



PAPER and INDUSTRIAL APPLIANCES
Incorporated
122 East 42nd Street, New York, N. Y.

Obituary

Hugh M. Strange

APPLETON, Wis., July 23, 1945—Hugh MacGregor Strange, 59, Neenah, Wis., president of the John Strange Paper Company, Menasha, Wis., died Sunday afternoon, July 15, of coronary thrombosis at his summer home near Gresham, Wis.

He was born March 1, 1886, at Menasha. He attended Neenah schools and the Oshkosh State Teachers College, Oshkosh, Wis. On March 19, 1910, he married the former Caroline Giffin in Chicago.

Mr. Strange, who had been associated for 40 years with the Strange Paper Company, was a charter trustee member of the Institute of Paper Chemistry, Appleton, Wis., and formerly served with the National Paper Board Association. He was a director of the First National Bank, Neenah.

Survivors are the widow; two sons, John G., Appleton, and Technical Sergeant Hugh, Jr., serving with the armed forces in South America; his mother, Mrs. John Strange, Neenah; two sisters, a brother and two grandchildren.

Private funeral services were conducted Wednesday, July 18, at the Laemmrich Funeral Home, Menasha, by Dr. Thomas Kepler, professor of religion at Lawrence College, Appleton, Wis.

Dr. Carl C. Thorne

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 23, 1945—The death occurred at Hawkesbury, Ont., on July 14, of Dr. Carl B. Thorne, K. C., vice-president of the Canadian International Paper Company, who was a pioneer in sulphite pulp manufacturing in Canada.

Born in Norway in 1876, and beginning his career as a cellulose engineer for a number of concerns in Norway, Germany and the United States, he joined the staff of the Riordon Pulp and Paper Company some forty years ago as engineer and sulphite pulp expert for their mills in Hawkesbury and Merritton, ultimately becoming technical director and vice-president of the company, which later became merged with the Canadian International Paper Company.

Among Dr. Thorne's contributions to the pulp and paper industry, mention should be made of his activity in helping to organize and carry on the work of the technical section of the Canadian Pulp & Paper Association, of which he was a councillor and officer for many years. He was deeply interested in the establishment of the pulp and paper research institute and the work of the Forest Products Laboratories.

Dr. Thorne was a member of the Canadian Pulp and Paper Association, Montreal; Engineering Institute of Canada, Montreal (Life Member); Technical Association of the Pulp and Paper Industry, New York; Norwegian-American Chamber of Commerce, New York; Quarter Century Society, Inc., New York; Technical Association of Norwegian Paper Industry, Norway (Honorary Member); Norske Ingenioer Forening, Oslo; Norske Teknisk Museum, Oslo; Kongelig Norske Seilforening, Oslo; Norske Selskab, Oslo, and Fredrikstad Seilforening, Fredrikstad.

Annie Perkins Simmons

Annie Perkins Simmons, mother of R. H. Simmons, chemist for the Government Printing Office, Washington, D. C., died suddenly in New York City on July 17th. Mrs. Simmons is survived by her son Bob and daughter Margaret.

Jacob Edge

Jacob Edge, vice-president in charge of sales of the Downingtown Manufacturing Company, Downingtown, Pa., died in the Chester County Hospital, West Chester, Pa., at 4:30 A.M. on Tuesday, July 24th. He was stricken with a heart attack while fishing on Saturday afternoon, July 21st. He was buried from his home on Thursday, July 26th, at 4:00 P.M. Interment was at Old Caln Meeting House,

THE LATE JACOB EDGE

Caln, Pa. He is survived by his wife, the former Mildred Foster of Virginia, and by one son and two daughters, all three of whom are in the Service.

Jay started working in the sales department of the Company in 1910. He later became assistant sales manager and more recently, vice-president in charge of sales. He designed many improvements in paper machinery which are now in successful use.

Leaton Irwin

Leaton Irwin, 82, chairman of the Irwin Paper Company, Quincy, Ill., and of the Decatur Paper House, Inc., Decatur, Ill., the Peoria Paper House, Inc., Peoria, Ill., and of the Quincy Compressor Company, died from a heart attack on July 10.

Mr. Irwin was born in Plymouth, Ill. on a farm and decided not to accept an appointment to West Point, which was later given to John J. Pershing. He founded the Irwin Paper Company in 1887, establishing the Decatur Paper House in 1930, and the Peoria Paper House in 1935. In 1920 he founded the Quincy Compressor Company.

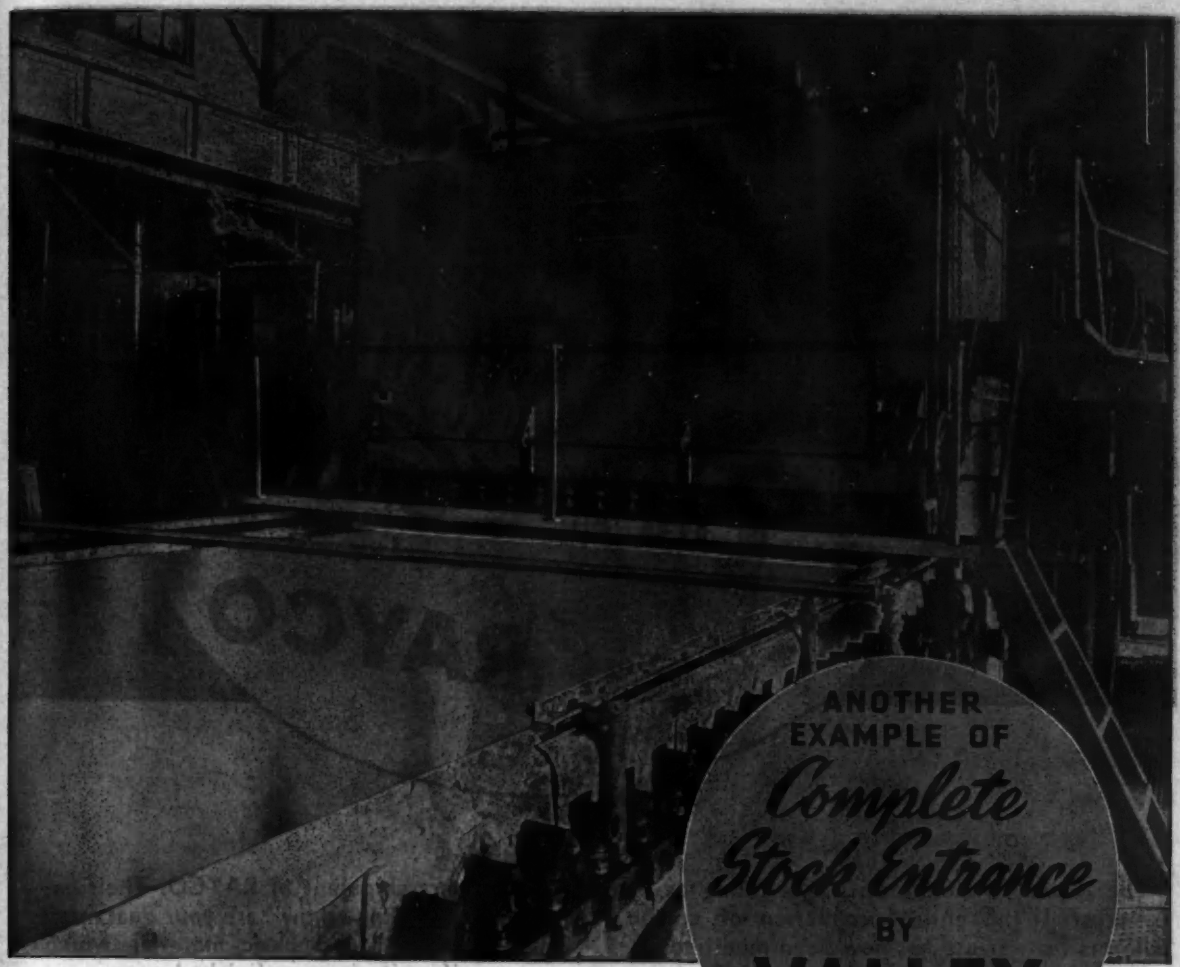
Surviving are his widow, a son, Maculay Irwin, president of the Quincy Compressor Company and the Irwin Paper Company, two daughters and six grandchildren.

Philip P. Schnorbach

Philip P. Schnorbach president and general manager of the Filer Fibre Company and president of the Manistee and Northeastern Railway died July 3.

A heart ailment which developed after an operation he had undergone in April proved fatal to Mr. Schnorbach, who was 73 years old.

Mr. Schnorbach was born in Muskegon.



SIMPLICITY IN DISGUISE

The simplicity of exterior design of this Headbox and Inlet Combination on Sorg Paper Company's No. 6 machine is merely a matter of good engineering—but the ingenious operating mechanisms and precision adjustments *behind* this plain-looking exterior are possible only as the product of fine machine work and technical know-how. The sum total is—*peak, paper-making efficiency.*

VALLEY IRON WORKS CO., APPLETON, WIS.

Slices and Head Boxes • Screw Presses • Micro-Mist Spray Dampeners • Laboratory Equipment
Pulp Washing Systems • High-Speed Beaters • Breaker Beaters • Vortex Beaters • Plug Valves
Flat and Rotary Screens • Thickeners • Deckers • Paper Markers • Roll-Headers

The recent WPB directive restricting as of August 1 the entire production of cotton linters for war use has now been modified.

Thus we anticipate we will be able to continue to supply the makers of fine paper a limited supply of RAYCO Linter Cotton, to help them meet their stepped-up production schedules.

RAYCO Linter Cotton, as you know, includes only virgin first-cut cotton linters, free from contaminating impurities. Railway Supply specialists in cotton fibers grade, classify, and inspect every shipment of RAYCO. Their experience and "know how" are your guarantee of uniformity in your basic material, which means uniformity in your finished paper.

Unless changing conditions develop the need for taking 100% of production to speed victory, we will continue to exert every effort to supply your fiber needs with the limited quantities of RAYCO Linter Cotton available. But after V-J Day, at the latest, you can be sure of having an ample supply of RAYCO virgin, first-cut cotton linters to meet your paper making requirements.

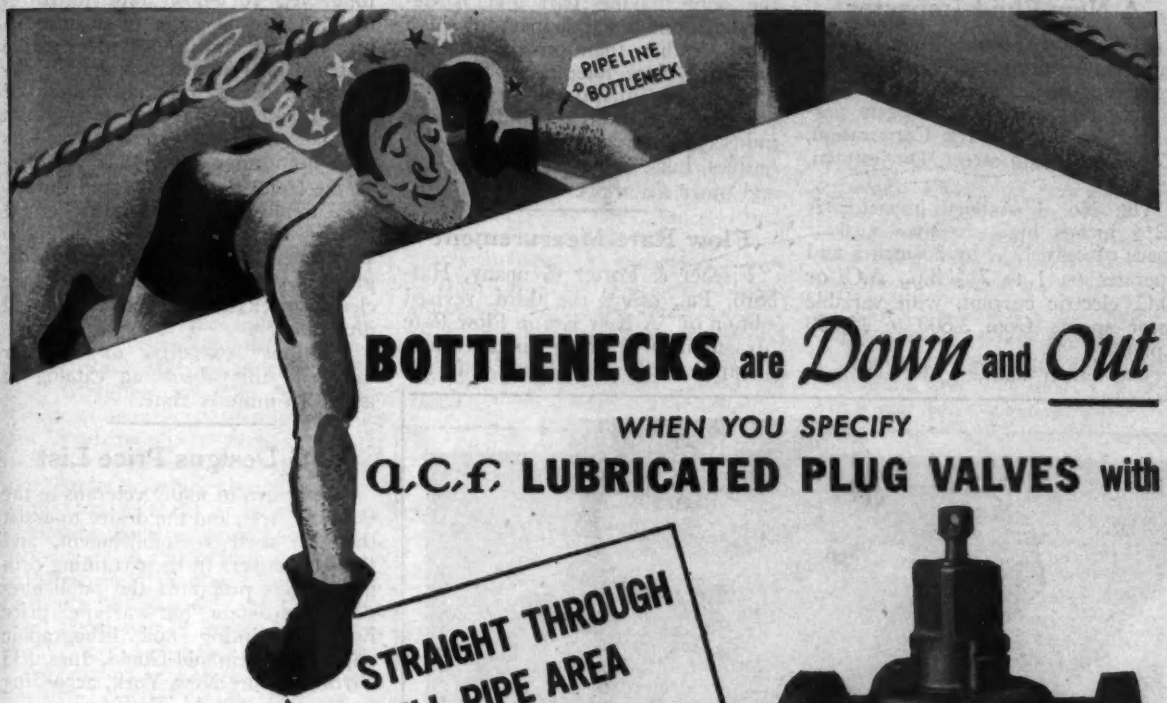
The RAILWAY SUPPLY & Mfg. Co., AND AFFILIATES

Specialists in Grading, Marketing and Processing Cotton Fibers

General Offices: Cincinnati, Ohio

Plants and Sales Offices:			
Cincinnati, Ohio	Charlotte, N. C.	New York, N. Y.
Franklin, Ohio	Covington, Tenn.	Chicago, Ill.
Atlanta, Ga.	Greensboro, N. C.	Detroit, Mich.

RAYCO LINTER COTTON

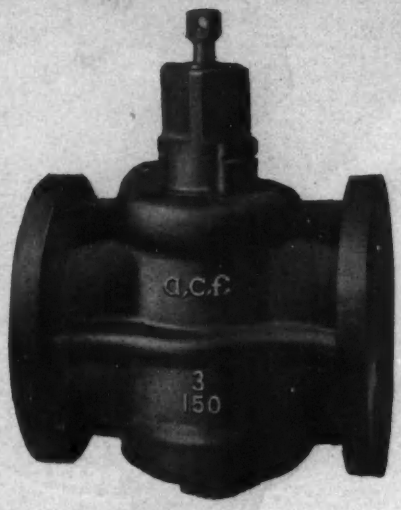


BOTTLENECKS are *Down* and *Out*

WHEN YOU SPECIFY

a.c.f. LUBRICATED PLUG VALVES with

STRAIGHT THROUGH FULL PIPE AREA PORT OPENING



The cylindrical plug of the a.c.f. Lubricated Plug Valve provides a round-cornered, full pipe-area port opening which assures (1) *unrestricted* flow and full pressure of fluids throughout your pipe lines (2) longer valve life — since flow velocities are not increased and abrasion is reduced. The over-all result is maximum efficiency at minimum cost in time, labor and power.

a.c.f. Lubricated Plug Valves have straight through ports. There is no change in direction of the flow. Seating surfaces are sealed away from the flow stream when in the open position — exactly the *opposite* of the exposed seating elements of valves which deteriorate from the cutting and abrasive action of ladings. Tight seating is achieved because seating surfaces are not damaged by lading flow. a.c.f. Lubricated Plug Valves need no auxiliary packing — they are thoroughly sealed by a resilient, easily renewable lubricant gasket. Representatives in principal cities carry adequate warehouse stock for quick delivery.

SOLVES LADING PROBLEMS

Tar, sludge, grouting, asphalt, viscose, rayon, nylon, granular solids, paints, paper pulp, pulp while in process, black liquor, white liquor, caustics, acids and similar viscous or waste materials are all handled efficiently. Send for Catalog No. 3-T.

a.c.f. AMERICAN CAR AND FOUNDRY COMPANY

VALVE DEPARTMENT

30 CHURCH STREET • NEW YORK 8, N. Y.

A New Fluid Impactor

The Asbury Fluid Impactor for the disintegrating, dispersing, homogenizing and emulsifying solids, liquids and pastes, has been perfected by the Asbury Corporation, 127 South Main street, Doylestown, Pa.

The No. 1 Asbury impactor is 22½ inches high, requires a floor space of only 17½ by 36 inches and operates on 1 to 7½ h.p., A.C. or D.C. electric current, with variable rotor speeds from 3,600 to 15,000 r.p.m.

The 9-inch stainless steel rotor is the only moving part and is dependent on liquid impact at high speed, rather than on the maintenance of close tolerances. The bulletin of the manufacturer states it has many applications in the paper industry, such as mixing sizes, adhesives, inks, clays, pigments, waxes and other materials.

Flow Rate Measurement

Fischer & Porter Company, Hatboro, Pa., offers the third, revised edition of "A New Era in Flow Rate Measurement", which discusses and illustrates the advantages of the rotameter for flow rate measurement. These 32 pages offer interesting reading and most informative material on rotameters and their application. Each basic advantage of the rotameter—its extremely high accuracy—its linear flow curve—its wide flow range—the ready visibility of the metering elements and fluid—the immunity of the Fischer & Porter Ultra-Stablvis rotameter to variations in viscosity and specific gravity—and other advantages are clearly discussed and extremely well illustrated.

The busy executive or engineer can read this absorbing catalog in about 15 minutes time.

R-G Designs Price List

The return of many veterans to the Graphic Arts, and the desire to assist them in their reestablishment, and their employers in their training programs, has prompted the publishing of an up-to-date "but wartime" price list of printing and lithographic papers by Reinhold-Gould, Inc., 535 Fifth Avenue, New York, according to Harry E. Gould, President.

The price list is complete with pricing data and essential "buying information," and, Mr. Gould emphasized, is designed for easy reference for "old hand" or "trainee." Full packing schedules, size and weight charts, tables indicating thickness, bulk and "economical cutting schedules" are distributed throughout the list with utmost consideration for the graphic artist.

C. V. Morris, Director of Trade Relations for Reinhold-Gould, Inc., was credited with typographic design and editorial content.

Book Features Rotameter

Its new Catalog 43-E, dealing entirely with armored rotameters for measuring and controlling flow rates at high pressures and temperatures, has just been mailed to the trade by Fischer & Porter Company, Hatboro, Pa. This catalog describes standard armored indicating meters and also recording or recording-controlling or totalizing armored meters with readings at the meter or at a remote location. It includes illustrations of many designs to accommodate pressures as high as 10,000 psi and temperatures up to 750 degrees F.

The new developments, covered for the first time in a catalog, are the revolutionary "Bead-Guide" rotameter metering tube; and the new F. & P. "Series 400" Rotaline armored valve body rotameter, both of which should have far reaching effect on the flow rate measurement field.

...APPROVED THROUGHOUT THE PAPER INDUSTRY FOR NINETY YEARS

W. G. P. have represented some of the leading manufacturers for many years. This representation has continued during war and peace and is indicative of mutual satisfaction between both paper maker and paper seller.

W. G. P. are actually doing something about post war planning. The principals of this company are conferring regularly with mill owners on selling problems of future paper tonnage. Perhaps you would like to know more about this organization and the facilities it can offer you. A letter to Messrs. Walker, Goulard or Plehn will receive prompt attention.

PAPERS
PRINTING — CONVERTING —INDUSTRIAL
TISSUE AND BOARD — SPIRAL MILL CORES — MILL SUPPLIES
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EXPORTS TO ALL PARTS OF THE WORLD

Duraplex Offers Protection

Application of the automotive finish resin, Duraplex C-49, to the newly developed self-sterilizing food wrappers was announced today by the Resinous Products & Chemical Company of Philadelphia. The resin was selected for its chemical inertness, durability and pigment wetting and binding properties, and the finishes produced with the resin are noted for their water resistance, adhesion, flexibility and toughness.

Originated at the California Institute of Technology by the Staff of the Rare Metals Institute, under the Direction of Dr. Alexander Goetz these new sterilizing coatings for food wrappers such as; metal foil, plastic films and paper, sterilize the surfaces which come in touch with food material by destroying or inhibiting bacteria, mold spores, etc., present on it. Furthermore, a "germicidal barrier" is thus formed which protects the contents of the package. The action of the surfaces, however, does not penetrate into the food materials except for the immediate vicinity of the surface in touch with the coating.

These S-Coatings which are just in the stage of being manufactured on a commercial scale as a "Sterilite" product by the Shellmar Products Company, Mount Vernon, Ohio, differ from most antiseptic, germicidal and fungicidal agents because of their complete lack of solubility, toxicity and presence of taste and odors. Since this material does not depend upon producing vapors or gases it is inexhaustible under most practical conditions.

The new development is based upon the germicidal action of silver known for many centuries but renders the practical application of silver for such purposes, economically feasible and chemically possible by increasing the effectiveness, on account of the formation of adsorption compounds in the oxydation layers on the surface of colloidal carbon, in conjunction with similar insoluble but surface-active agents. In this way only minute quantities of silver have to be used in order to form pigments which can be incorporated into suitable resinous vehicles resulting in coatings which exhibit self-sterilizing properties.

Because the activity of silver bearing pigments may be affected, considerable care must be exercised in choosing the components of a vehicle for "S coatings". Duraplex C-49, widely used in automotive finishes, was selected as one of the major constituents because of its chemical inertness and excellent pigment wetting and binding properties. This alkyd resin affords finishes of exceptional durability, a point of major importance. By varying the binder formulation a coating can be made which will have a greater or lesser degree of surface activity with corresponding change in the length of service which will be obtained. The formulation has not been revealed.

While coatings of this type will reach the stage of commercial production in the very near future, numerous tests have been run by packaging foods such as cheese and dried fruits with S-coated wrappers during the last 2 years. Unwanted tastes or odors were not imparted.

Agawam Offers Stabilizers

A series of latex and emulsion stabilizers for synthetic rubber latices, including GR-S, Hycar, and Neoprene, as well as for natural latex and reclaimed dispersions of rubber, have been developed by the Agawam Chemicals, Incorporated, West Springfield, Mass. These new surface active agents are made by condensing fatty acids with amines and are available in quantity.

Agawam Chemicals also supplies compounds of synthetic latices for coating, impregnating and sizing operations and will modify a latex compound for a given process.

Fresh Water Mill Supply—Warren DL Type Pump—12,500 GPM—25' head—580 RPM.
One of the Warren 3000 GPM pumps on Vortrap service which eliminates dirt in the stock and insures good clean pulp.
Dependability is a "MUST"
whether it's
PUMPS OR PULP
In this case it is both. Penobscot Chemical Fibre Co., Great Works, Me., have an enviable reputation on both sulphite and soda pulp which are unusual . . . unusual as to strength, cleanliness and uniformity . . . all adding up to DEPENDABILITY of product.
Then there are Warren Pumps . . . upwards of a hundred of them at Penobscot Chemical Fibre . . . and hundreds more at other progressive pulp and paper mills . . . all giving round-the-clock dependable service . . . at remarkably low operating and maintenance costs.
FOR EVERY PULP AND PAPER MILL SERVICE, SPECIFY DEPENDABLE
ARMY E NAVY
WARREN PUMPS
WARREN STEAM PUMP COMPANY, INC., WARREN, MASSACHUSETTS

PAPER
TRADE JOURNAL
Entered at U. S. Post Office.
W. L. Cook, Editor

PAPER SUPPLY IMPROVING

Resumption of Swedish wood pulp shipments to this country, although of small tonnage, has greatly increased the widely held optimistic view of the future. Industry, trade, and governmental reports and comment reflect a definitely encouraging belief that the paper industry should now make relatively rapid progress to a more normal supply situation. In its summary of the paper supply, the latest industry report of the Department of Commerce states that, no sudden bonanza in pulpwood, wood pulp, paper or paperboard supplies is in sight, but a gradual improvement is anticipated during the next several months. As conditions improve a relaxation or complete abolishment of WPB orders affecting the various segments of the industry will be promptly forthcoming. Evidence of this is already apparent from amendments to many existing orders which have been issued already or are currently pending.

In its comment on the third quarter pulp allocation which discontinued segment allocation, except for certain reservations to meet minimum production requirements on specific paper and boards, the report states in part that, the third quarter pulp allocations program under M-93 was definitely a step in the direction of returning a greater freedom of action to the industry and also a greater degree of responsibility. Business management, the report states, by cooperating until the war ends can assist materially in the speedy termination of wartime restrictions. When orders are canceled business must be prepared to fully accept the desired freedom of enterprise and not continue to expect special assistance from the war agencies.

In its interesting and informative analysis of the civilian consumption of paper and paperboard during the war, the Department estimates that of a total supply of paper and paperboard of 4,286,000 tons in the first 1944 quarter, civilian use was 68%; of a total of 4,989,000 tons in the second quarter, civilians consumed 65.8%; of 4,944,000 tons in the third quarter, civilians used 65.3%, and in the fourth 1944 quarter, of a total output of 4,916,000 tons civilians consumed 65.5%. Of a total output of 4,878,000 tons of paper in the first 1945 quarter civilian consumption amounted to an estimated 62%.

In commenting on the civilian consumption of paper the Department states that, obviously such data are difficult to prepare and subject to much discussion but they do give an indication of the amount of the wartime supply which the civilian population obtained; ordinarily this amounts to around 95 to 97% of the total supply, the other 3% being used for export. While the supply of paper and paper products has increased about 19% during the war, the civilian claims against this supply fell to 62% in the first quarter of 1945, having been at 68% in the same quarter in 1944. This is perhaps the smallest decline that has taken place from one year to another since the beginning of the war, indicating that war demands are leveling out. While civilian claims have amounted to about two-thirds of the total supply of paper and paperboard, direct military claims took about 9% of the total in the first quarter of 1944, increased to 13% by a year later, and indirect military claims held steadily around 22%, with export claims around 2%. Thus, the increased claims of other agencies have been satisfied by reducing the civilian allotment.

In further explanatory comment on the consumption data the report states that, as to the claims by individual grades of paper or paperboard, civilian claims for newsprint ranked highest, being 97.4%. It might be pointed out that at the time newsprint showed a tonnage increase from 727,000 tons to 763,000 tons, or up 5%, direct military claims rose from 0.7% to 1.0% of the total supply. Generally speaking, the supply has not changed greatly either in total or by grades of paper and paperboard since the beginning of 1944. The producing mills have been operating virtually at capacity or at least commensurate with the supply of available pulp. Fine paper and special industrial paper are the two groups showing the lowest civilian claims, being around 15 to 25% of all claims. On the other hand, this is the group showing the higher percent claimed for military use. Direct military is estimated to have taken 19.7% of the total supply of fine paper in the first 1944 quarter and increased to 27.7% in the first 1945 quarter, while industrial paper during the same period rose from 9 to 15%. In paperboard, the military's percent for containerboard rose from 13% in the first 1944 quarter to 27.5% in the first 1945 quarter. The group, miscellaneous board, shows 45% as being taken by direct military uses and 25-30% for civilian use, while indirect military took about 25% and exports 3%.

FINE PAPER OUTPUT GAINS

Expected reductions of orders for nitrating pulp in the third quarter will benefit manufacturers of fine papers. The Department of Commerce reports that fine paper mills are operating on an average of only 3 to 4 days a week. This schedule cannot be increased until more chemical wood pulp is available. Production of fine paper for April, 1945, was 78,000 tons, compared with approximately the same tonnage in 1944. Output for the first four months of 1945 was estimated at 330,000 tons, compared with 321,000 tons in the like period in 1944, which is an increase of 2.8%. In the first quarter production of 193,860 tons of fine paper, 72,920 tons of market wood pulp were consumed; 106,758 tons of the producers own pulp, and 13,522 tons of chemical wod pulp from other mills were consumed.

WPB To Restrict Swedish Newsprint

WASHINGTON, D. C., July 25, 1945—Imports of standard newsprint paper will come under War Production Board control August 3, 1945, WPB announced today.

By an amendment to the General Imports Order, M—WPB today implemented a recommendation of the Combined Raw Materials Board that the supply of newsprint from Scandinavia be used to meet at least a part of the requirements of the liberated areas of Europe. This recommendation was made to effect an equitable distribution of the world's supply of newsprint for the purpose of satisfying essential requirements until the end of the war. Standard newsprint paper is in short supply, and European requirements will have to be met from North America unless the liberated areas obtain imports from Scandinavia, CRMB pointed out.

This position was also taken by the Newspaper Industry Advisory Committee at its meeting last month. At that time the newspaper committee recommended that newsprint requirements of liberated European areas be supplied by Scandinavian rather than North American mills. It was emphasized by the committee that the adoption of this recommendation would save shipping space by eliminating two-way traffic of newsprint across the Atlantic, would permit liberated areas to obtain newsprint quickly from their nearest source of supply, would stabilize delivery schedules from North American mills, and would augment the United States newsprint supply by reducing or canceling some European requirements for North American supplies.

Applications for the import to the United States of newsprint from North European countries will be denied on and after August 3, WPB said. This policy will carry out the recommendations of both CRMB and the Newspaper Industry Advisory Committee.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1945		Corresponding Weeks—1944	
June 9	92.8	June 10	90.7
June 16	91.5	June 17	91.5
June 23	90.4	June 24	90.8
June 30	87.5	July 1	86.2
July 7 (Revised)	47.9	July 8	50.9
July 14	*87.3*	July 15	87.7

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1944	88.7	88.5	88.1	87.6	88.7	89.8	80.3	90.6	88.2	92.5	90.6	82.4	88.1
1945	86.7	89.4	90.2	88.1	89.8	*91.2*							

COMPARATIVE YEARLY SUMMARIES

	1938	1939	1940	1941	1942	1943	1944	1945
Year to Date	67.4	78.6	86.7	93.1	96.3	87.6	87.2	*87.6*
Year Average	71.5	83.4	85.6	97.4	90.4	87.8	88.1	

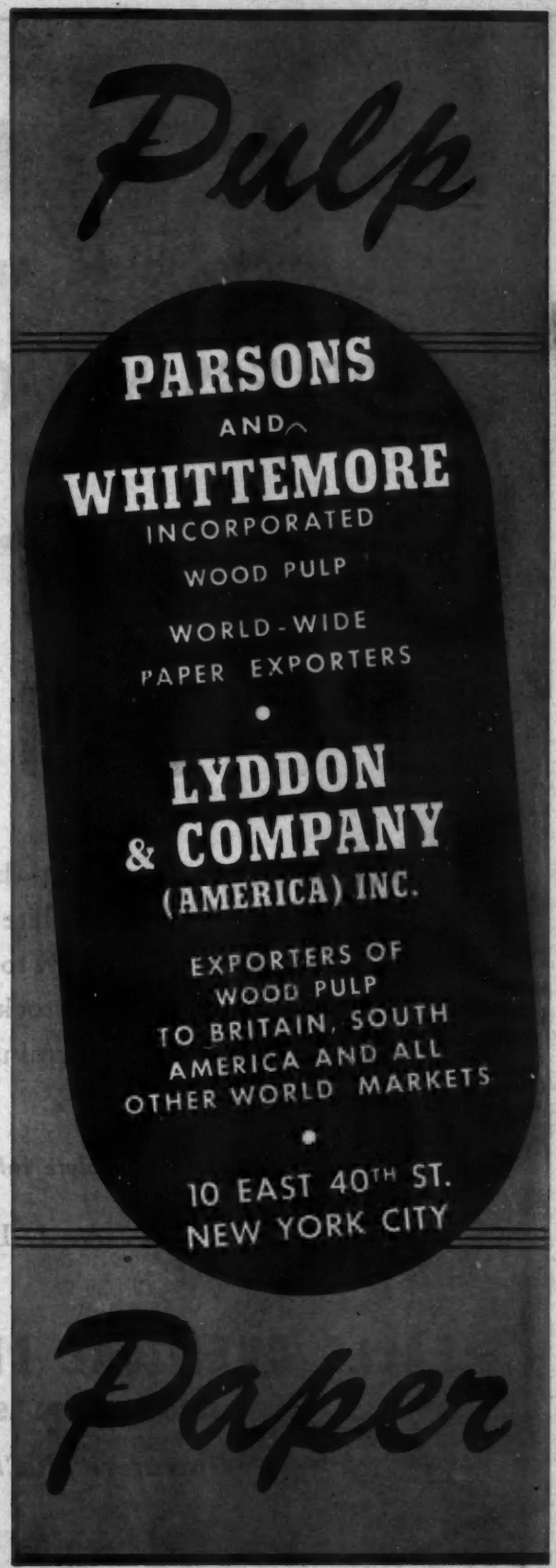
*Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Current Weeks—1945		Corresponding Weeks—1944	
June 9	97	June 10	96
June 16	96	June 17	95
June 23	96	June 24	96
June 30	96	July 1	95
July 7	62	July 8	60
July 14	*90*	July 15	91

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1944	90	96	95	96	96	96	85	96	92	95	95	85	93
1945	91	95	97	97	96	96							

†Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.



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Edited by R. G. Macdonald, Secretary

Bacteriological Examination of Pulp and Slush Stock*

TAPPI Tentative Standard T 228 m-45

Scope

The procedures herein are recommended, from the consensus of experienced bacteriologists, for the bacteriological examination of pulp (both wet and dry) and slush stock and represent in every case what may be considered at this time as minimum standard practice. Because of the exacting technique required in bacteriological procedures, they can be expected to yield reproducible results only in the hands of properly trained technicians. Likewise, more than usual care must be exercised in the collection and shipment of samples. If possible, this work should be done by a bacteriologist.

Apparatus and Equipment

The following apparatus may be obtained from the usual laboratory supply houses.

1. *Balance.* This should be equipped with a platform of a size to readily accommodate the Petri dishes used. It should be sensitive to 0.1 gram.

2. *Colony Counter.* Any one of several types may be used. The Quebec, the Buck, and the Wolffhuegel colony counters have been found satisfactory. A hand tally for recording the count is recommended.

3. *Containers for Dry Samples.* Two single envelopes, one placed inside the other are used. The larger one may be 9 by 12 inches and the smaller 6.5 by 9.5 inches. They should be made of heavy kraft paper, tested for ability to withstand breakdown due to embrittlement or charring during sterilization in the hot-air oven. After sterilization, the flap on the outer envelope is secured by Scotch tape.

Another procedure is to make a folder of suitable size of heavy kraft paper and to sterilize it in the oven. After the pulp sample has been placed inside the sterile folder, the latter is sealed with Scotch tape.

4. *Cotton.* Rolls of nonabsorbent cotton are used for making plugs.

5. *Dilution Bottles.* 8-oz. narrow-mouthed, square-sectioned glass bottles fitted with screw caps are used for water blanks.

6. *Disintegrators.* These may be either the electrical type, such as the Stevens (Stevens Electric Co., Racine, Wisconsin) and Bersted (Bersted Mfg. Co., Fostoria, Ohio), or the ball-mill type. A kraft paper cover is placed over each disintegrator cup or jar prior to its sterilization by steam heat.

7. *Flaming Equipment.* Depending upon the circumstances, an alcohol lamp, a gasoline blowtorch or a Bunsen burner may be used to flame forceps, scissors, knives, mouths of sterile containers, etc.

8. *Flasks.* 200-ml. Erlenmeyer flasks may be used as containers for sterile media.

9. *Forceps.* These are necessary for handling samples of pulp. Each pair is placed in a separate kraft envelope made especially for this purpose, and is then sealed with gummed tape. The unit is then ready to be sterilized. An alternative procedure is to sterilize the forceps by flaming, in which case the envelope is unnecessary.

10. *Incubator.* A reliable incubator which will maintain a temperature of 37 ± 0.5°C. is necessary to provide proper incubation conditions for the inoculated plates and tubes.

11. *Knives.* A paring knife with its blade cut down to within 1.5 inches of the base of the handle is satisfactory. A knife used to cut paperboard is also suitable. In either case the knives are prepared for sterilization as described under (9) Forceps.

12. *Petri Dishes.* Petri dishes, 100 by 15 mm. and preferably of Pyrex glass, are recommended for plating samples. They may be sterilized conveniently in metal boxes (preferably copper) fitted with covers.

13. *Pipets.* Two sizes of pipets are used, 1.1-ml. milk-dilution type and 10-ml. ordinary type. Mohr 10-ml. pipets, whose tips have been cut off to give an opening about 3 mm. in diameter at the delivery end, are best for pipetting pulp suspensions. The pipets are placed in metal boxes (preferably copper) to be sterilized.

14. *Sample Bottles.* 8-oz. wide-mouthed bottles, either glass-stoppered or with aluminum screw caps, are used for collecting wet stock samples. The bottles should be selected with care so that they will withstand sterilization. The stoppers and necks of the glass-stoppered bottles are protected from contamination by metal foil, heavy kraft paper, or oilcloth. A strip of paper is also inserted in the mouth of the glass-stoppered bottle to prevent sticking of the stopper during sterilization.

15. *Sampling Scoop.* A tinsmith can make a suitable scoop (*see* Fig. 1) from tinned iron sheet. The diameter of the scoop will depend upon the opening

* This method has been approved as a tentative standard by the Bacterial Control Methods Committee. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary, Technical Association of the Pulp and Paper Industry, 122 E. 42nd St., New York 17, N. Y. Reprints of this standard may be obtained from the Secretary at 25 cents each.

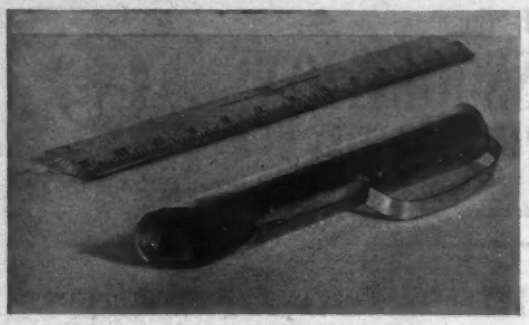


FIG. 1
Sampling Scoop

of the sample bottle, while the length will be about 10 inches. A conveniently placed handle completes the scoop. The scoops are wrapped individually in heavy kraft paper kept closed by rubber bands during sterilization. If desired, a large spoon may be substituted for the scoop.

16. *Scissors.* A satisfactory type has a 4-inch cutting surface. Each pair is prepared for sterilization as described under (9) Forceps.

17. *Sterilizer.* Two types are needed, the particular style and size depending upon the needs of each laboratory:

(a) A steam sterilizer, such as the pressure cooker or the autoclave. When much sterilization is required, the added convenience of a well-regulated modern autoclave will justify the additional expense.

(b) A hot-air oven. For most laboratories, electrically heated ovens are more satisfactory than those heated by gas, but the latter may be used if desired.

In both cases, thermometers are used to determine the inside temperature during sterilization.

Chemicals and Media

A. *Alcohol.* Either methyl alcohol or 95% denatured ethyl alcohol is used to sterilize by flaming.

B. *Standard Nutrient Agar.* Difco dehydrated nutrient agar is recommended. It may also be prepared from the ingredients, according to the procedure outlined by the American Public Health Association *(1)*. After the medium is dissolved, the hot mixture is placed in Erlenmeyer flasks, in dilution bottles, or in test tubes, and plugged. It is then ready to be sterilized.

Sterilization of Equipment and Media

Depending upon the nature of the equipment to be sterilized, one of three methods is followed:

1. STEAM HEAT (PRESSURE COOKERS & AUTOCLAVES)

The following are sterilized by heating for 20 minutes at a minimum of 121°C. (250°F.) corresponding to 15 p.s.i. steam pressure: *(a)* cups and jars for disintegrators; *(b)* media (unless other conditions are specified by the manufacturer of the medium); *(c)* water for dilutions.

2. DRY HEAT (ELECTRICALLY OR GAS-HEATED OVENS)

The following are sterilized by heating for 4 to 5 hours at a minimum temperature of 165°C. (330° F.): *(a)* heavy kraft envelopes and folders; *(b)* forceps; *(c)* knives; *(d)* Petri dishes; *(e)* pipets; *(f)* scissors.

Care must be taken to avoid overheating and consequent scorching of any paper containers or wrappers used on instruments that are being sterilized.

3. FLAMING

Scissors, forceps, knives, and similar instruments are alternatively sterilized by flaming. Keep such equipment in denatured 95% alcohol or in methyl alcohol while not in use. When needed for cutting or handling samples, remove the equipment from the liquid, let the alcohol drain off for a few moments, then burn off the excess alcohol in the flaming equipment.

Sampling

1. FREQUENCY OF SAMPLING

It is an axiom in bacteriological control that occasional single samples are inadequate, since the analyses reflect the conditions which prevailed only at the time when such samples were taken. The actual number of samples which should be taken depends largely on the reasons which prompt the analysis.

2. DRY LAP PULP

Two sterile envelopes, one within another, are used for each sample. Every 2 weeks a check should be made on the technique of handling these sterile envelopes by sampling the inner envelopes as if they were pulp samples, and testing for bacterial content.

A method which has proved to be satisfactory for sampling lap pulp sheets is as follows: Make a cut (perpendicular to the operator) with a sterile knife through several sheets near the center and parallel to the edges; a second cut parallel to the first and about 5 inches from it; and a third cut perpendicular to the first two and near the operator. Then carefully open the sterile envelope, discard the top sheet of lap pulp and slip the other sheets into the envelope. Then make a last cut about 8 inches from the third cut. The sample is pushed into the inner envelope, after which the outer envelope is sealed by means of Scotch tape. This will give a sample approximately 5 to 8 inches. Two such samples may be taken at different sections of the sheets of lap pulp.

3. WET LAP AND SLUSH STOCK

Samples of wet pulp must be guarded from contamination during collection and shipment. All apparatus must be clean and sterile. The samples are transferred to sterile wide-mouthed bottles, each bottle being from one-half to two-thirds full.

If free chlorine is known or suspected to be present in portions of the mill system to be sampled, adequate provision should be made to destroy the chlorine residual as soon as the sample is introduced into the sample bottle. A sufficient amount of sodium thiosulphate (solid or solution) may be placed in the sample bottle prior to its sterilization to destroy the chlorine residual.

Use the sterile metal scoop or spoon for collecting the sample of slush stock. Dip a sample of the stock from the vat, chest, or beater, using caution to avoid contamination of the sample from the hands coming in contact with the stock. Transfer the sample to a sterile wide-mouthed bottle, discard any paper liner used in the bottle, replace the stopper or plug in the bottle, and retain the sample for dilution before plating.

Preparation of Sample

Weighing, plating, and culturing of pulp samples should be done in a room which is relatively free of air currents and dust. The surface of the work table

should be sponged with a 5% aqueous solution of phenol about a half hour before plating.

A tolerance of ± 10% is permitted in the weight of the sample.

1. Dry Samples

(a) Direct Weighing Method. Weigh each sample in a tared, sterile Petri dish placed on the balance. Cut the envelope, in which the sample is received, along the flap by means of a sterile knife or sterile scissors. Open the envelope by pressing the sides, without touching the inner surface, and remove the pulp sample with sterile forceps. Hold the sheet of pulp in one hand, cut away with sterile scissors and discard the outer edges of the sheet. Make a series of cuts about ¼ to 1 inch apart, parallel to the side of the sheet and opposite the edge held in the hand. Remove the cover of the tared Petri dish and place it on another sterile dish, the cover of which is removed at the time of cutting the sample. Cut squares of pulp directly into the dish by making a series of cuts perpendicular to those made previously.

The particular type of disintegration equipment employed and the volume of liquid which it will handle satisfactory will govern the amount of pulp sample which is to be cut for disintegration. Therefore, cut sufficient pulp to make a 1.0% suspension of fibrous material after disintegration has been completed. (Not less than 2.0 grams of pulp should be used.) Replace the cover on the Petri dish; check the weight and adjust the excess or deficiency to obtain the desired weight of sample.

(b) Disintegration. Place the weighed sample and the necessary volume of sterile water in the disintegrator cup or jar. In adding material to the cup do not touch the metal cap with the hands, but lift it by grasping the paper hood which was placed over the cup before sterilizing. Lift both hood and metal cap only enough to permit access to the cup. If several pulp samples are to be examined, cool the water blanks to prevent the temperature of the disintegrated sample from exceeding 45°C. (113°F.) during disintegration. Let the paper hood remain on the cup at all times to prevent possible contamination through the opening in the metal cap or around the top of the cup.

Place the cup containing the weighed pulp sample and sterile water in the mixing machine and run for approximately 6 minutes, or until disintegration of the pulp is completed. Test the sterility of the cups periodically by adding sterile water, as when testing pulp, and then culturing portions of the rinse water for controls.

2. Wet Stock Samples

Prepare samples of heavy stock, such as that from beaters, chests, or similar places, by collecting the samples according to the procedure described under Sampling Wet Lap and Slush Stock and weighing a portion of the wet stock into a dilution blank of sterile water. This may be accomplished by transferring the sample to a tared dilution bottle (99 ml. of sterile water) which remains on the balance until 1.0 gram of sample has been added to it. Shake the diluted sample vigorously before pipetting and transferring to the Petri dish.

3. Control Testing of Disintegration Equipment and Technique

Make control tests on the technique of disintegration at frequent intervals by using a sample of sterilized pulp and following the above procedure in detail. Plates containing such samples should be free from colonies of bacteria.

Plating and Incubating

In culturing a disintegrated pulp sample having a low bacterial content, distribute with a sterile pipet a total of 10 ml. of the pulped mixture in approximately equal portions in five Petri dishes. On the other hand, if the sample has a high bacterial content, proceed as described under slush pulp in the next paragraph. Add to each plate 15 to 20 ml. of standard nutrient agar, cooled to about 45°C. (113° F.), then agitate the plates individually to disintegrate clumps of pulp and obtain an even distribution of the pulp fibers in the medium. A reciprocating motion, similar to that on the wire screen of a fourdrinier machine, is desirable. It is important that all lumps of pulp be broken up in order that the plates may be examined easily and accurately. Pour one control plate (without pulp) with each set of five plates, thus providing an agar control for each sample examined.

Plate samples of slush pulp in the same way as for disintegrated pulp. Since such pulps may contain more bacteria than disintegrated pulp, it is advisable to make a sufficient number of dilutions to produce plate counts in the range of 30 to 300 colonies per plate. The degree and number of dilutions for each type of stock examined must be determined by preliminary tests or previous experience.

After the plates have been agitated, place them on a level surface until the medium solidifies; then invert and incubate the plated samples at 37 ± 0.5°C. (98 ± 1°F.) for 48 hours. Do not stack the plates too closely in the incubator.

Counting Plate Cultures

After incubation for 48 hours at 37°C. examine the cultures for the presence and number of colonies by holding the plates against a dark background, indirectly lighted. Plate counters are especially desirable.

The amount of fibrous material distributed over a given area of plate surface has been found to be an important factor in the number of colonies observed in a given sample of pulp. Therefore it is important to follow carefully the directions regarding the pulp consistency (1.0%), volume of sample plated (10 ml.), and number and size of plates used.

If the pulp has been separated into individual fibers and mixed well in the medium, the colonies may be easily counted. If any particles are observed in the cultures which cannot be definitely identified as colonies, they should be examined microscopically. Plates with spreading colonies should be counted if at all possible, otherwise they should be reported as "spreading colonies." Examine control plates also and make a record of the number of colonies found on the control for each pulp sample.

Calculation of Results

Results for dry pulp are expressed as the number of colonies per gram of air-dry pulp. Since the consistency of the fibrous suspension made from such samples is 1.0%, there is present 1.0 gram of stock in each 100 grams of suspension. A total of 10 ml. of the pulp mixture (0.10 gram of actual pulp) is cultured in five plates. Therefore, to obtain the number of colonies per gram of pulp, multiply the total number of colonies found by 10.

Bacterial counts on samples of wet stock may be expressed as colonies per gram of stock or as colonies per milliliter of stock.

Report

Report the average number of colonies per gram (or per milliliter, if called for) according to the following method *(2)*:

Number of colonies per gram		Report to nearest
1 to	50	1
51 to	100	5
101 to	250	10
251 to	500	25
501 to	1,000	50
1,001 to	10,000	100
10,001 to	50,000	500
50,001 to	100,000	1,000
100,001 to	500,000	10,000
500,001 to	1,000,000	50,000
1,000,001 to	10,000,000	100,000

As indicated above, the count of any particular sample of pulp is obtained by multiplying the total count on the plates by 10. However, when the counts of several samples are to be averaged, the logarithmic method of averaging is recommended. This method of averaging tends to minimize the effect of occasional high counts which may have resulted from some transitory condition in the plant. Details concerning logarithmic averages may be found in the U. S. Milk Ordinance and Code *(3)*.

Example:	Count	Log.
	100	2.0
	1,000	3.0
	10,000	4.0
		9.0

Logarithmic average = 3.0, or 1000 colonies per gram

Literature Cited

1. Am. Public Health Assoc., "Standard Methods for the Examination of Water and Sewage," 8th Ed., p. 201 (1936).
2. *Ibid.*, p. 209.
3. U. S. Public Health Service, "Milk Ordinance and Code," *Bull.* 220 (1939).

Vinyl Resin Adhesives Use in Weatherproof Boxes*

By D. Santmyers[1]

Abstract

Du Pont Adhesives Nos. 77 and 78 are water-soluble vinyl resin base adhesives which were developed to meet a specific need of the solid fiber industry. Their use as weatherproof adhesives is possible because of the unique property of being water-soluble in the adhesive solution preparation stage but developing remarkable water resistance under the conditions of use. A weatherproof adhesive solution can readily be prepared from the dry powdered adhesives by first slurrying in water, then cooking, and finally cooling to 100° to 130° F. The dry powders and the prepared adhesive solutions remain stable indefinitely unless contaminated by materials that will spoil in themselves. The advantages of the vinyl resin base adhesives are: high rate of board production with low waste; simplicity of adhesive preparation; adhesive solution stability; the production of high quality, firm, dry, odorless board with dependable water resistance and noncorrosive glue line.

Adhesives Nos. 77 and 78 are water-soluble vinyl resin base adhesives which were developed to meet the specific need of the solid fiber industry for an adhesive capable of withstanding the stringent container specifications of the armed forces.

As early as 1935, the Grasselli Chemicals Department of E. I. du Pont de Nemours & Company completed research and full-scale plant evaluation of polyvinyl resin base adhesives. It is interesting to note one of the conclusions reached as a result of this work. The report states that while the polyvinyl resin base adhesives were not economically competitive with silicate or starch adhesives, then in use, they produced remarkably water-resistant glue lines and demonstrated excellent operating characteristics.

It was not until military demand created a market for weatherproof adhesives that the present Du Pont Adhesives Nos. 77 and 78 reached commercial development. The idea of using water-soluble resins to produce a weather-resistant bond is unique, and the short space of two years has seen extensive commercial utilization of this unusual property of these adhesives. This is one of the wartime developments which may well have important peacetime applications.

Preparation for Use

These two adhesives are supplied to the solid fiber industry as dry powders, in 50-pound multiple wall kraft paper bags. The dry powdered adhesives do not deteriorate with age, are not hygroscopic, and do not cake in the shipping container. An adhesive solution can readily be prepared in the present commercial types of adhesive preparation equipment.

To prepare the adhesive solutions, the dry powder is added slowly to the required amount of unheated water in the mixing tank. The concentration of solids used in each case depends upon local requirements and conditions, i.e., type of equipment, paper, glue station, machine speeds desired, etc. A 20% solution of No. 77 and a 21% solution of No. 78 are the concentrations generally preferred although concentrations as low as 15% and 17.5%, respectively, have been successfully and satisfactorily used. Continual agitation is maintained to slurry the adhesive into the water. Stirring is continued after the last addition of dry adhesive until a smooth, homogenous mixture is obtained.

The cold slurry is then heated to approximately 185° F. and maintained at this temperature for 0.5 to 1 hour with agitation continued. The use of direct steam is preferred to the use of steam coils for heating the adhesive solution although the latter can be satisfactorily used where necessary by employing higher temperatures, longer heating time, and the use of special precautions to assure complete solubility and dispersion of the adhesive. In using an open steam pipe, it is necessary to compensate for the water condensed into the adhesive during the cooking

* Presented by title at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 19-22, 1945.

[1] Technical Service Representative, E. I. du Pont de Nemours & Co., Wilmington, Del.

process. The amount of condensation will vary but an approximate allowance of 10% of the total volume of water required is normally satisfactory. After cooking, the adhesive solution is cooled to 100° to 130° F. when it is ready for use. The solution may be cooled with a water spray on the outside of the tank or by transferring the hot solution into a cooling tank equipped with coils.

The prepared adhesives are smooth viscous liquids with considerable tack when employed in thin films. Adhesive solutions prepared as described above and free from borated starches are stable indefinitely and will not lose their adhesiveness when once prepared. The solutions have no objectionable odor nor will they impart any odor to the finished board.

Characteristics

The desirable characteristics of adhesives No. 77 and No. 78, when used in the production of solid fiberboard, may be summarized as follows:

1. Simplicity of adhesive preparation. The adhesives require no pH control nor any additive chemicals.
2. High rate of board production. Machines have been operated as high as 400 feet per minute.
3. Adhesive solution stability. No control is required during preparation, application, nor for normal periods of storage.
4. Produces high quality, firm, dry board with dependable water resistance. The board can be fabricated into boxes in less time than board combined with other weatherproof adhesives.
5. These adhesives will impart no odor to the board nor will they contribute to corrosion of the packaged contents.
6. Reduced waste board production. This saves critical paper.

Some unusual properties of these weatherproof adhesives are as follows:

a. V1 solid fiberboard laminated with No. 77 is resistant to ply separation under prolonged exposure to boiling water. In an experimental test, a V1 board composed of four 24 point kraft liners and bonded with No. 77 showed no ply separation and 100% fiber pull after exposure to boiling water for 1 hour.

b. Adhesives Nos. 77 and 78 have a pH in the range of 5.5 to 6.5. These pH's can be reduced to 4.4 with alum without any deleterious effect on the adhesive properties. This factor is important since this pH corresponds to approximately the lowest pH possible because of pickup of alum from the paper in recirculating the adhesive from the glue pan over the paper and back to the pan.

c. These weatherproof adhesives are generally unaffected by oils of animal, vegetable, or mineral origin. Therefore, they impart a degree of grease-resistance to board laminated with them.

These products are incompatible with appreciable amounts of borax and silicate of soda, large amounts of alum and sulphuric acid, some processed starches, and formaldehyde. Bitusize A-1, some dextrinized starches, and corn starch are compatible with solutions of 77 and 78. Bitusize A-1 is a recommended extender for the adhesives and its use makes possible the reduction of adhesive costs. A composition consisting of 70 parts of No. 78 solution and 30 parts of Bitusize A-1, or 60 parts of No. 77 solution and 40 parts of Bitusize A-1 produces a solid fiberboard of excellent quality with a high wet bursting strength value and no ply separation after 24 hours immersion in water.

While the compatibility of some starches also makes possible the reduction of adhesive costs, their incorporation is not generally recommended and careful control of the formulation must be exercised since they frequently produce an adhesive with inferior water resistance.

Up to the present time, the use of these adhesives has been confined entirely to the production of Victory-board for V-boxes or closely related types of containers for military and Lend-Lease requirements. There has been very little time or material available to devote to other possible uses. However, several manufacturers are developing experimentally some new unique and interesting uses for these products.

Experimental samples of either adhesive can be made available from time to time for experimental evaluation of post-war uses, such as water-resistant beer cases, convolute and spiral wound tubes and drums, labels, frozen or refrigerated food packages, fresh vegetable and citrus fruit crates — also in weather-resistant wall and panel board or for bag and package sealing.

Polytechnic Offers Graduate Course

A graduate lecture course on Pulp and Paper Technology will be offered by the Department of Chemical Engineering of The Polytechnic Institute of Brooklyn, N. Y., beginning on October 4th according to an announcement by Dean R. E. Kirk. The course will be under the direction of Robert S. Aries, Chemical Consultant and Field Director of the Northeastern Wood Utilization Council. It will consist of thirty lectures which will be given by Mr. Aries and invited specialists in the various fields of paper and cellulose technology. The course will be given on Thursdays from 6:00 to 8:00 P.M.

Among the topics which will be considered are the raw materials for pulp and paper, their requirements and economics. The sulphite, soda and sulphate processes will be examined from their technological aspects. Miscellaneous pulping and pulp treating processes will be studied with relation to their present and potential importance. Topics such as bleaching, sizing, loading and filling, coloring, etc. will be considered from their theoretical and practical aspects. Emphasis will be laid on specialty and coated papers, the combination of plastics and rosins with paper, printing and the correct methods of testing of pulp products.

Further details may be obtained by addressing Dean R. E. Kirk, Graduate School, Polytechnic Institute of Brooklyn, 85 Livingston Street, Brooklyn 2, N. Y. Registration for graduate course is scheduled for the week of September 24th.

Williamson on Powell River Board

VANCOUVER, B. C., July 16, 1945—A. H. Williamson, former Canadian timber controller, has been appointed a member of the board of directors of the Powell River Company. The appointment was made at the quarterly meeting of the board of directors at Vancouver, B. C.

J. M. Hallern and Edward Brooks of Minneapolis and R. H. Scanlon of San Francisco went to Vancouver for the meeting and subsequently made an inspection visit to Powell River.

Planning Comparative Tests on Case Liners*

By Henry A. Wolsdorf[1]

Abstract

Because of failures in the case liners used in military packaging, the Container Coordinating Committee, W.P.B., was requested to obtain information that would permit satisfactory corrections to be made.

It was decided to test all materials meeting the requirements of Federal Specification UU-P-271a together with various shipping containers and a proposed program was suggested. Arrangements were made for the execution of the test work.

The purpose of this paper is to indicate the nature and extent of one of the development projects on packing and packaging that was conducted by the Container Coordinating Committee, W.P.B., for the armed services.

In the latter part of 1943 reports were being received that case liners being used in military packing were failing. Failures were occurring in the case liner material as well as at seams and closures. The Container Coordinating Committee was requested to obtain information that would permit satisfactory corrections to be made. After some study it was decided that the first step was to observe the performance of various types of case liners in boxes when subjected to rough handling under various conditions of temperature and humidity.

Case Liners

Prior to planning the performance tests on case liners, improvement in case liner materials had been attempted by arbitrarily changing some of the requirements of Federal Specification UU-P-271a, Paper; Kraft, Wrapping, Waterproofed. These changes did not produce the desired results, however, and it was concluded that the physical tests in the specification did not reflect the physical strains to which case liners are actually subjected in service. Consequently, it was agreed that case liner performance tests should be made to form a basis for new and revised physical tests that would produce a satisfactory specification for case liner material. As a result of this decision another project was initiated with the National Bureau of Standards, Washington, D. C., to revise existing physical tests on case liner materials and devise any new tests that may be deemed necessary and to coordinate this work with the case liner performance tests.

Plans for the performance tests should naturally include various kinds of case liners placed in various kinds of shipping boxes and tested under conditions that simulate actual service conditions. Since military packages are destined for delivery to arctic bases as well as to tropical bases it was decided to make tests under conditions simulating these two service conditions. It was difficult to decide on the severity of the test but it was finally planned to establish this on the basis of actual performance of case liners in the field. Certain liners were reported to be giving satisfactory performance while others were reported to be failing. The severity of test conditions was therefore to be adjusted so as to permit the satisfactory liners to pass the test and the unsatisfactory liners to fail in the test.

In deciding on the case liners to be tested, it was planned that all types of construction of materials meeting the requirements of Federal Specification UU-P-271a should be included. The list of case liners to be tested therefore included materials that were reinforced and others that were not reinforced, creped and uncreped, treated or impregnated and untreated, materials having high and others having low water resistance, high water vapor permeability and low water vapor permeability, and finally asphaltic and nonasphaltic laminated materials. The above list was to be expanded to include a variety of special waterproof materials that were being developed, introducing some desirable physical characteristics that were not available in standard commercial products.

Boxes Tested

The size of boxes to be used in the tests also presented a problem. Two classes of boxes are being used to a large extent by the military services. One is a small box having a gross weight not exceeding 70 pounds. This box is intended to be handled by one man. The other box is considerably larger, having a gross weight not exceeding 200 pounds. This box is meant to be handled by two men. The small box usually has a greater load concentration on the faces of the box but the large box is subjected to greater wracking. It was decided to include boxes of each of these sizes so as to determine both of the effects just mentioned.

As to the types of boxes to use, it was felt desirable to include all of the common commercial types. For the large size, nailed wood, plywood and wire-bound boxes were selected and for the small size, nailed wood, wire-bound and V2s fiberboard boxes. These types cover a range from a very rigid to a very flexible type of container. All boxes were to be made to meet the requirements of U. S. Army Specification No. 100-14A, U. S. Navy 39P-16A.

The number of boxes to be tested for each kind of case liner, size, and type of box was set as ten maximum in order that accurate test results may be obtained. If sufficiently consistent results were indicated for any particular liner, it was agreed that fewer boxes may be tested but never less than five.

Test Procedure

A tentative test procedure was then set up to cover the kinds of tests desired. In the case of the arctic test, the test boxes were to be given initial rough handling, then exposure at a low temperature until the temperature inside the test box was —10°F.

* Presented by title at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 19-22, 1945.

[1] Chairman, Container Coordinating Committee, War Production Board, Washington, D. C.

Additional rough handling was prescribed immediately after the box was removed from the cold room. The tropical test was to include initial rough handling, exposure at 100°F. and 90% relative humidity with intervals of spraying of water to simulate rain. Additional rough handling was also prescribed immediately after the conditioning phase.

Some thought was given to the manner in which damage to case liners was to be ascertained. Large holes and tears are readily visible to the eye. There are, however, pin holes and areas of low resistance to water penetration that are not easily detected by the unaided eye. In order to locate and evaluate these hidden failures, it was decided that each box should be sprayed for about 1 hour after the arctic and after the tropical tests. This arrangement permitted water to find the weak spots in the case liners, thereby wetting the contents, and also set a measure for the penetration of water through the case liner.

It was realized that the kind of load used in the test boxes would greatly influence the test results. Since many of the boxes of the sizes previously indicated are used for spare parts a type of load simulating spare parts was selected. The result was a loose, shifting load which would exert serious strains on the case liners.

With the preliminary plans for the tests completed there remained the selection of a laboratory to perform the tests. The test schedule indicated that about 2000 to 2500 boxes were to be tested and, in order to obtain the test data in a reasonable time, it was considered desirable to test 40 boxes per day. This number of boxes to be tested daily presented unusual problems for a laboratory, such as space required for storing knocked down boxes and liners, space for unpacking and packing the test boxes, facilities for making up and strapping the test boxes, facilities for handling and moving the test boxes, sufficient parts that made up the load so that boxes could be packed while others were being tested. The full-time requirements for seven operators and helpers and two supervisors presented a personnel problem. Finally, it was found that no laboratory had all of the necessary rough handling and conditioning equipment already installed. A survey of laboratories indicated that Package Research Laboratory, Rockaway, New Jersey, was best prepared to undertake the test program. A contract for the tests to be performed at this laboratory was arranged by the Office of Production, Research and Development and, after conditioning rooms were constructed there, work on the tests was begun.

A complete description of the performance tests on case liners is given in the paper titled "Comparative Rough Handling Tests on Various Types of Case Liners" by Earl R. Stivers, Director, Package Research Laboratory, Rockaway, N. J. Information on the results of these tests and on the results of the tests being made at the National Bureau of Standards will be presented at a future date.

Comparative Rough Handling Tests on Various Types of Case Liners*

By Earl R. Stivers[1]

Abstract

The type of box and the methods of packing and testing for a comparison of the ability of case liners to withstand rough handling are described. Arctic and tropical conditions were simulated.

The failures noted in the case liners under test were holes, tears, scuffs, pinches, and wicking.

The purpose of the tests described in this paper was to compare various types of case liners in standard types of boxes under conditions simulating those existing in the arctic and tropic regions.

Boxes Used in Tests

Thirty-one different types of case liners were compared involving the testing of almost 2000 boxes. These boxes were in two sizes, a large box 28¼ inches long by 18⅞ inches wide by 15⅝ inches deep and a small box 18½ inches long by 12⅜ inches wide by 9-5/16 inches deep. Nailed, wirebound, and plywood boxes were used for the large size; nailed, wirebound, and fiberboard V2s boxes were used for the small size. All boxes were made as good as or better than U. S. Army Specification No. 100-14A.

Nature of Contents

The original instructions specified that the contents should be metal parts of irregular shape individually wrapped in paper and weighing approximately 1 pound each for the small box and approximately one third less in weight for the large box. After fruitless attempts to obtain such parts from several sources it was decided to use 3 inches long by 3 inches round hollow, steel cylinders and 3 inch wooden cubes individually wrapped with corroflex and kraft paper respectively. Not only were such parts more readily obtainable but they also assured the loading of every box in exactly the same manner. In the first series of tests, the large box was packed with a loose wrapped load of 193 pounds or 40 pounds per cubic foot.

A round pad was placed in each corner and the outside cylinders placed parallel to the scores of the case liners. Preliminary tests developed the fact that this arrangement was necessary if any case liners were to come through the tests at all. The damage done even with this arrangement was so severe that a change was made later to a cartonized load.

All small boxes were tested with a loose wrapped load of steel cylinders. Here again corner pads were used and the cylinders next to the scores were laid parallel to them. This load weighed 66 pounds or 55 pounds per cubic foot.

In following tests the load for each large box was cartonized. Steel cylinders and wooden blocks were placed inside 200 pound test "B" flute cartons and six cartons with a gross weight of 175 pounds were

* Presented by title at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 19-22, 1945.

[1] Member TAPPI; Director, Package Research Laboratory, Rockaway, N. J.

packed in each box as shown in Fig. 3. Before packing, each corner on each carton was flattened with a mallet.

Preparing of Liners and Boxes For Test

Each box was examined carefully for poorly clinched nails or staples and these defects when found were corrected. Each liner was examined minutely for holes, scuffs, tears, and poorly pasted joints and when any such defects existed that liner was rejected.

The liner to be used was placed over a mandrel, formed to shape, and then placed in the test box. Each case liner packed with the cartonized load was also protected by 200 pound test pads on each side, end, top and bottom. These pads were cut 1 inch scant in length and width and had their corners clipped off ½ inch.

After the box was packed the case liners were sealed. Some liners were furnished with an asphalt adhesive protected by a cellophane strip. These liners were sealed by bringing the top edges of the liner together and applying pressure by means of a pair of rollers. A few of the liners which were coated with a thermoplastic material were heat sealed, others were sealed with a waterproof adhesive applied by brush.

The boxes were closed, nailed, and strapped as well as or better than required by U. S. Army Specification 100-14A.

Test Procedure

All boxes regardless of size or test conditions were first given 30 falls in the standard rough handling machine. This is a hollow, hexagonal drum, 14 feet in diameter, which revolves at 1 revolution per minute. The container being tested is made to fall on its faces, corners, and edges in a regular sequence.

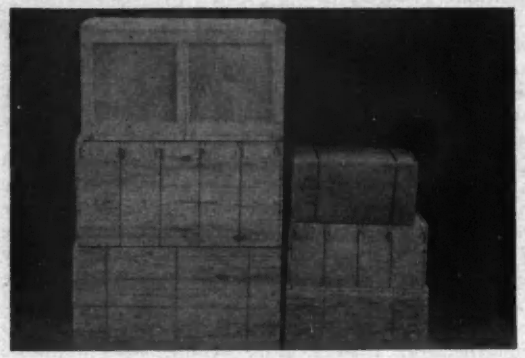


Fig. 1
Sizes and Types of Boxes

After the drum test, the boxes were routed to either the arctic or tropical room.

For the arctic test, the boxes were first given a 1 hour wetting in the spray room and then placed in the arctic room while still wet. This room has a floor area of 8 by 6½ feet and usually was loaded with ten large and ten small boxes. On a few occasions, however, the boxes were double decked and as many as 30 large or 45 small boxes placed in the room.

Two automatic controls permitted exact duplication

Fig. 2
Large Box with Loose Wrapped Load — Small Box with Loose Wrapped Load

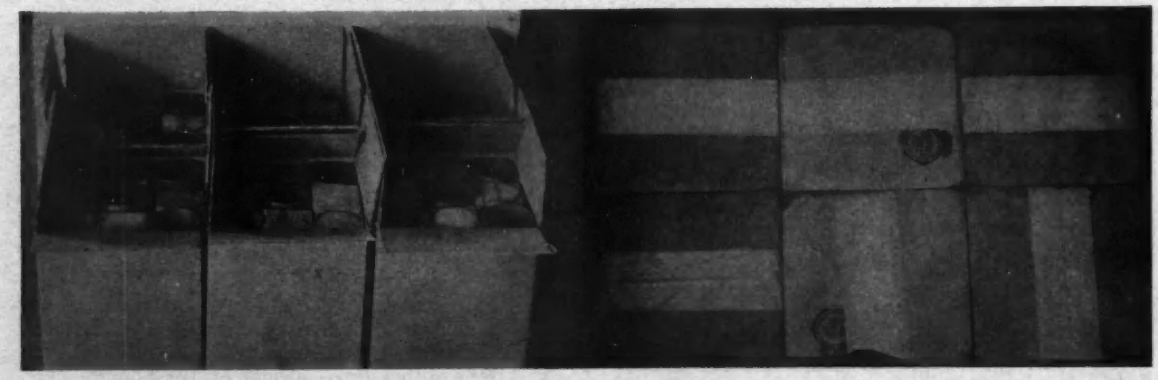


Fig. 3
Method of Packing Load in Cartons — Cartonized Load in Large Box

of conditions for each test lot. One control held the air in the room at the preselected minimum, the other held the *inside* of the box at the desired minimum temperature.

In these tests, the air control was set for a minimum of minus 30°F. and the box control for minus 10°F. About 12 to 14 hours was required to lower the temperature inside the box to the desired minimum. The boxes were held at a temperature of minus 10°F. inside the box for at least 2 hours before being removed for further tests. These additional rough handling tests were made immediately on each box as it was removed so that no box was out of the room more than 5 minutes before the tests were complete. Readings taken on typical boxes indicated the temperature inside the box changed so slowly that there was no apparent change in this short period.

The large boxes were given 6 complete end over end cycles after being taken from the arctic room. The small boxes were dropped on each of their eight corners from a 12 inch height.

For the tropical test, the boxes were taken directly from the drum and placed in the tropical room for a period of 24 hours. This room has a floor area of 12 by 7½ feet and was loaded with fifteen large or ten large and ten small boxes on dollies. Twenty minutes out of every hour spray heads in the ceiling delivered ⅔ of an inch of water at 70°F. over the entire area.

A two pen control instrument working with dry and wet bulb thermometers kept the temperature at 100°F. and the humidity at 90%. In the early hours of the period the water spray caused a drop of 10° in the temperature but toward the end of the period the drop was hardly perceptible.

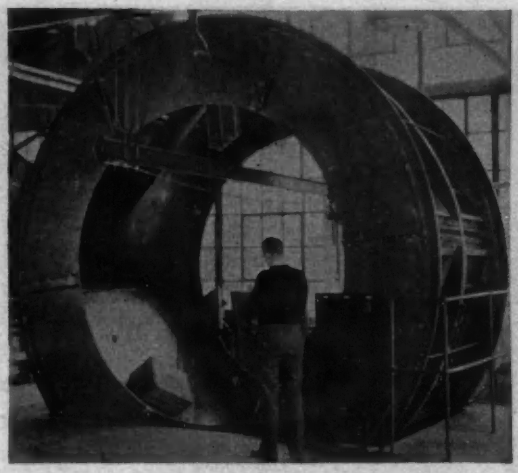


FIG. 6
Standard Rough Handling Machine

After 24 hours in the tropical room, the boxes were placed on the vibrating table for 2 hours. This vibrating table operates at 500 r.p.m. with ¼ inch travel. The arrangement of the boxes was the same for all groups of case liners — two large boxes on bottom, two on end and one on side; or six small boxes on bottom, two on end, and two on side.

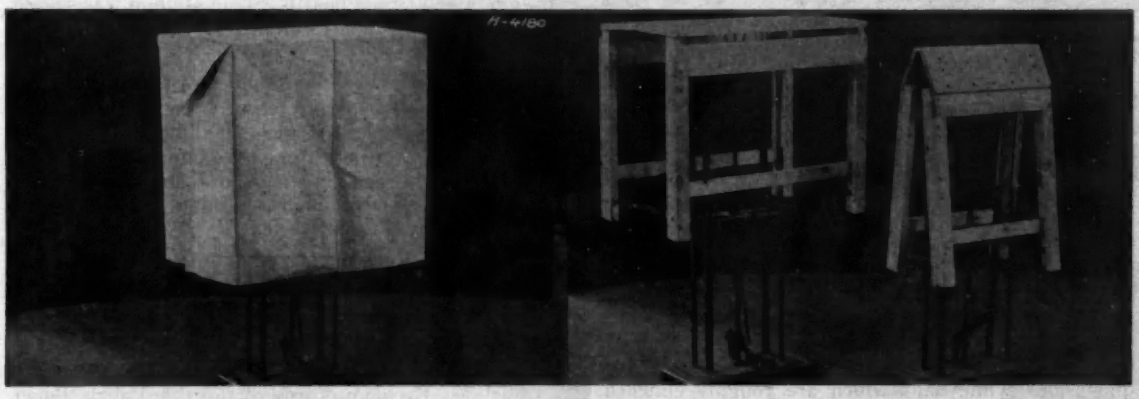


FIG. 4
Formed Liner on Mandrel — Mandrels for Forming Case Liners

FIG. 5
Liner in Box with Corrugated Pads in Place — Sealed Liner, Folded Flat on Top of Load

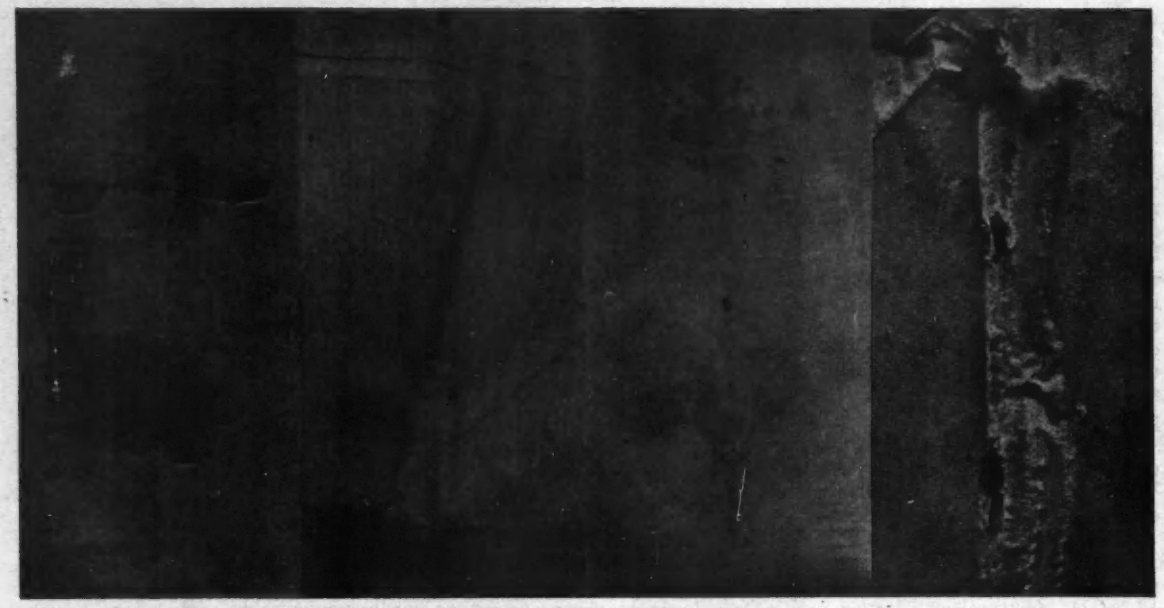


FIG. 7

Scuffing | Tear along Score | Wicking | Pinched Score

After the complete cycle of tests, either arctic or tropical, the boxes were placed in the spray room for 1 hour. In this time they received a thorough wetting to develop any failures in the liners.

The boxes were opened immediately after spraying and the load scored for dryness. The case liners were removed from the boxes and carefully examined for holes, tears, scuffs or other damage.

Most boxes were still in fairly good condition after the tests. Warping was the most serious damage and this occurred to any extent only in the tropical test.

Observations

All types of boxes may have occasional defects which may injure the case liner. In pointing out these hazards it is not intended to condemn any one type of box. All are used successfully and all are necessary to the war effort. Loose or broken knots, adjacent boards of unequal thicknesses, and often warped boards cause sharp edges that cut or scuff case liners. Nail pulling causes an increase in box dimensions while nails which are roughly clinched, deflected by knots, or driven in the wrong places frequently result in punctured liners. Roughly sawn boards and warped boards cause a concentration of load on small areas increasing abrasion on the liner. Unclinched staples and loosened metal fasteners on the inside of the box are difficult for any liner to overcome. Lack of rigidity in the paper box throws strains on the scores of the case liners causing large tears if the liner is not flexible.

Failures In Case Liners

Failures noted in the case liners were holes, tears, scuffs, pinches, and wicking. Holes were listed as pin holes, up to 1/16 inch, small holes, 1/16 to 3/8 inch, and large holes, over 3/8 inch. With the loose wrapped load holes of all sizes occurred in approximately equal numbers. With the cartonized load, holes were predominately pin holes.

Tears occurred mostly at the scores and ranged from 1/2 to 9 inches long. These were usually due to liners that were unable to stretch and accommodate themselves to distortion such as occurs when there is nail pulling or when the box has no rigidity at all as with the fiberboard box.

Scuffs were due mostly to abrasion of wet liners by rough or warped boards. Some scuffing was severe enough to wear holes completely through the case liner.

A pinch occurred when the liner worked in between poorly fitting box parts or when the load filled the box so completely as to make it difficult to close.

Wicking or wetting through the liner without puncture occurred when the liners did not have a complete barrier between inner and outer layers or when scuffing removed the outer layer.

TAPPI Notes

John F. Carroll, formerly of the Franklin Paper Company is now with the Paper Corp. of America, Cheboygan, Mich.

Earl M. Brennan, formerly of the Pollak Paper & Box Company is now chemical engineer for the Railway Supply and Mfg. Company, 335 West 5th St., Cincinnati, Ohio.

C. G. Hilsdon, formerly of the Standard Cap Corporation is now chief engineer of the Embossing Division of Reynolds Metals Co. 539 West 25th St., New York, N. Y.

W. A. Yackley is now chief chemist of the Standard Register Company, Dayton, Ohio.

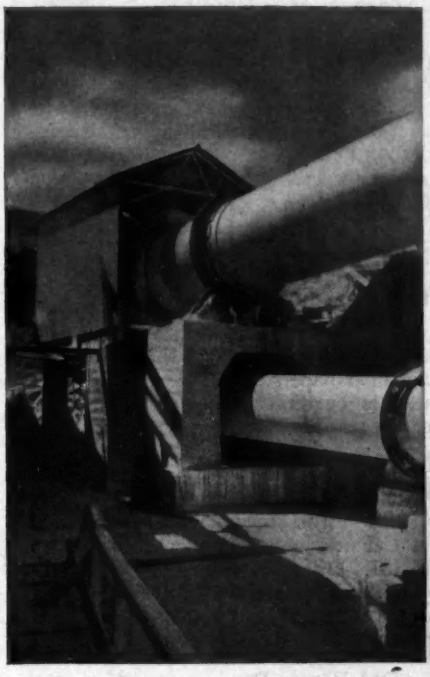
Alan P. Adrian, formerly of the Detroit Sulphate Pulp and Paper Company is now chemist for the Neenah Paper Company, Neenah, Wis.

T. Ross Moore, formerly of the Gapesia Sulphite Company is now control superintendent for the Anglo-Canadian Pulp and Paper Mills, Quebec, P. Q.

C. R. P. Cash, formerly of the Champion Paper & Fibre Company is now superintendent of the Brown Corporation, La Tuque, P. Q.

Kurt Wandel is now associated with the Thomson Paper Mills, Inc. Thomson, N. Y.

PAPER MILL OPERATORS



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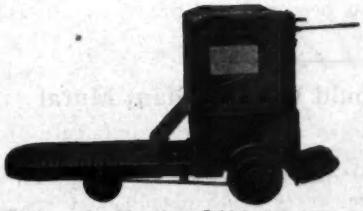
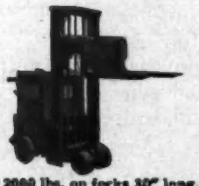
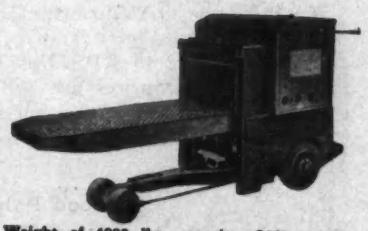


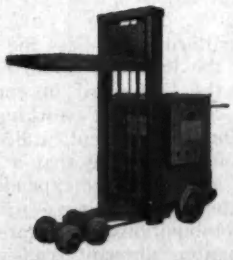
Platform size 24 x 42 x 11" high, low position; 15" high when elevated. Capacity: 2000, 3000, and 4000 pounds.



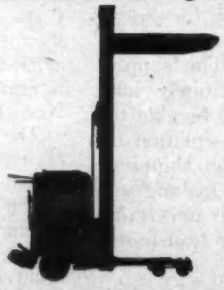
Capacity 2000 lbs. on forks 30" long. Truck turns from a 5' aisle into an intersecting aisle of 5'.



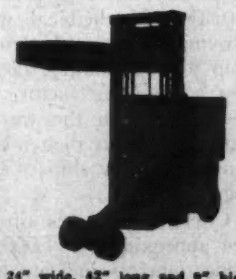
Weight of 4000 lbs. capacity—3850, without battery. Truck turns from a 5' 4" aisle into an intersecting aisle of 4'.



Platform 24" wide, 53" long and 11" high, low position. Capacity 2000, 3000 and 4000 pounds.



The Wright-Hibbard Telescoping high lift truck is designed to operate in the most congested areas of factories and warehouses. The exceptionally narrow width and short overall length found in other Wright-Hibbard trucks are retained in this model.



Platform 24" wide, 42" long and 9" high, low position. Weight of 4000 lb. capacity—3000 without battery.

New York Paper and Pulp Market Review

Future Paper Supply More Favorable as More Wood Pulp Appears Available in Third and Fourth Quarters—Sweden May Ship 300,000 Tons Of Pulp This Year—Mills Need More Waste Paper.

Office of the PAPER TRADE JOURNAL,
Wednesday, July 25, 1945.

A more adequate civilian paper supply is expected now that Sweden has resumed exports to the United States. Months must pass, however, before any substantial tonnage can be received here and all-over demands are likely to continue very heavy for the remainder of the year. The Swedish pulp shipments and the increased output of Canadian pulp will ease the tight supply situation but wood pulp is expected to continue relatively scarce during the current year.

The index of general business activity for the week ended July 14 rose to 136.7, from 122.2 in the preceding week, compared with 139.2 for the corresponding week in 1944. The index of paperboard production was 160.9, compared with 159.3 in the preceding week, and with 146.5 for the corresponding week in 1944.

Paper production for the week ended July 14 was estimated at 87.3%, compared with 87.7% for 1944, with 90.2% for 1943, with 86.5% for 1942, and with 100.7% for the corresponding week in 1941.

Paperboard production for the week ended July 14 was 93.0%, compared with 91.0% for 1944, with 91.0% for 1943, with 71.0% for 1942, and with 92.0% for the corresponding week in 1941.

Dollar-and-cent maximum prices on ten grades of blotting paper were established by the OPA in Amendment 7 to MPR-450, effective July 24, 1945. The prices range from $10 to $17.50 per cwt. for quantities up to 10,000 pounds, in standard packing, delivered in Zone A. Differentials are provided for larger quantities.

Increased prices from $1 to $4 a ton were allowed by the OPA to manufacturers of two major grades of jute liner and gypsum linerboard, in Amendment 22 to RPS No. 32, effective July 24, 1945. The new prices are $58 a ton for grayback gypsum linerboard; $68 a ton for cream faced gypsum linerboard, and $55.50 for gypsum lathboard, f.o.b. mill.

Wood Pulp

Estimates of available market wood pulp for paper manufacturers in the current quarter range up to 11% increase over preceding quarters. The supply situation in chemical wood pulp is definitely improving. How much tonnage Sweden will be able to ship to this country, now that the price situation is less a deterring factor, is dependent upon shipping facilities. With the war in the Pacific making so extremely heavy demands on shipping, it is uncertain now how many ships will be available for transporting wood pulp.

Current estimates of stocks of pulp in Sweden are approximately 1,000,000 tons, and estimates in some quarters indicate not more than 300,000 tons can be expected to reach this country during the remainder of 1945.

Rags

Mill demand for cotton cuttings is active. The market is strong, with buyers taking about all supplies. All grades of new rags are active. Prices are very firm at ceiling levels.

Demand for old cotton rags continues steady. The roofing grades are being freely purchased. Prices are firm at ceiling levels.

Old Rope and Bagging

Demand for old Manila rope continues heavy, with limited supplies making it difficult to meet requirements for strong fiber papers.

More firmness is currently reported in the old bagging market at this date. Supplies are limited and while prices are reported firmer, no material change has been reported.

Some 10,000 bales of burlap were purchased by the government for July-September delivery. Total shipments from Calcutta to world markets were up in May to 114,331,600 yards, compared with 86,371,100 yards in April. Export of jute rags from Calcutta world markets in May totaled 28,185,900 bags, compared with 32,695,200 bags in April.

Old Waste Paper

Mill demand for paper stock continues urgent with mills requiring more supplies than are found available at this date. The strike of newspaper delivery men in this city is estimated to have caused a decline of some 4,000 tons of waste paper during the walkout.

Twine

Demand for twine is good. No change in the supply situation has been reported this week. Prices continue firm.

Reinhold-Gould Unveils Giant Mural

Tracing thirty-seven steps in the manufacture of paper from "tree to trade", a giant photo mural has been unveiled in "Paper Hall", the new Grand Central Zone executive offices of Reinhold-Gould, Inc., fine paper merchants at 535 Fifth Avenue, New York City. Dramatically reaching 14 feet to the ceiling, the mural credited to Drix Duryea, nationally famous artist and photographer, is 33 feet 4 inches long, and is represented as one of the largest murals decorating New York offices.

The modern montage pattern symbolizes the overall architectural spirit of the Reinhold-Gould offices, which are described as the last word in compact operational effectiveness and efficient working environment. Harry E. Gould, President, called the offices specifically functional, declaring that a minimum of personnel time and effort is expended in unprofitable motion and method. Adroit use of glass partitions, comforting combinations of fluorescent and incandescent illumination, pleasant wall colors and sound-proofing add up to "work-inviting" quarters.

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MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, July 25, 1945.

BLANC FIXE—The market for blanc fixe is reported unchanged for the week. Current demand is reported fair. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton.

BLEACHING POWDER—Demand is currently reported active. Supply situation reported satisfactory. Bleaching powder is currently quoted at from $2.50 to $3.10 per 100 pounds. All prices in car lots, in drums, f.o.b. works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 24 cents per pound; 2,000 pounds, 24¼ cents per pound; less than 2,000 pounds, 24¾ cents per pound, f.o.b. shipping point.

CAUSTIC SODA—Supply situation continues tight, with production good and very heavy all-over demand. Manpower limits output. Solid caustic soda is currently quoted at $2.30 per 100 pounds. The flake and ground are currently quoted at $2.70 per 100 pounds. All prices in car lots, in drums, f.o.b. works.

CHINA CLAY—Demand for some grades of china clay is reported fair this week. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mines. Imported china clay is currently quoted at from $13 to $25 per long ton, ship side.

CHLORINE — All-over demand heavy. Essential requirements met. Supply situation improved. Prices unchanged. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b. works.

ROSIN—Light offerings at unchanged OPA ceiling prices: "G" gum rosin at $5.75 per 100 pounds, in barrels, Savannah. "FF" wood rosin is currently quoted at $5.75 per 100 pounds in barrels, New York. Average price of 70% gum rosin size is currently offered at $6 per 100 pounds, f.o.b. works. Conservation Order M-387 of February 28, limits rosin to 70% of 1944 quota for paper.

SALT CAKE—Demand reported moderate. Quotations on salt cake continue to remain unchanged. Domestic salt cake is currently quoted at $16 per ton.

SODA ASH—Market requirements for soda ash continue heavy. Production at capacity. Supply improved. Bulk deliveries prompt; bagged lots slow. Prices continue unchanged. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Market supply of cash corn reported light this week. Corn prices firm. Starch quotations continue unchanged. Pearl is currently quoted at $3.72 per 100 pounds. The powdered grade is currently quoted at $3.83 per 100 pounds. All prices f.o.b. Chicago.

SULPHATE OF ALUMINA — Supply situation reported good. Quotations are unchanged. Prices on the commercial grades are quoted at from $1.15 to $1.25 per 100 pounds. The iron free is currently quoted at $1.75 per 100 pounds. All prices in car lots, in bags, f.o.b. works.

SULPHUR—Demand is reported active for sulphur. Quotations on all grades continue unchanged. Annual contracts are currently quoted at $16 per long ton, f.o.b. mines. The current contract prices at Gulf Ports remains unchanged at $17.50 per long ton.

TALC—The market for domestic talc is reported fair this week. Quotations unchanged. Domestic grades are quoted at from $16 to $21 per ton, at mines. Canadian $24 per ton. All prices in car lots.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

Standard News, per ton—			
Roll, contract	*$61.00	@	—
Sheets	69.00	@	—
* OPA Maximum Price.			
Kraft—per cwt.—Carload Quantities Zone A, Delivered			
Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag	*4.375	"	—
* OPA Manufacturers' Prices.			
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½	1.00	"	—
White No. 2	.90	"	—
Anti-Tarnish M.F.	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Toilet—1 M. Sheets—Per Case			
Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.20	"	—
Bleached, Jr.	3.20	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	11.25	@	—
No. 1 Manila Wrapping, 35 lb.	6.00	"	6.25
No. 2 Manila Wrapping, 35 lb.	5.75	"	6.00
Boards, per ton—			
News	*50.00	@	—
Chip	*50.00	"	—
Sgl. Mla. Lt. Chip	*62.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*63.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers	
100% Rag Ext. No. 1	$39.10 @	$46.00	$40.25 @	$47.25
100% Rag	32.20 "	37.75	33.35 "	39.25
85% Rag	.... "	....	29.90 "	35.00
75% Rag	23.00 "	27.00	24.15 "	28.25
65% Rag	.... "	....	22.80 "	27.75
50% Rag	18.70 "	22.75	19.90 "	24.25
25% Rag	16.40 "	20.00	17.55 "	21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers	
No. 1	$10.55 @	$12.75	$11.70 @	$14.25
No. 2	9.65 "	11.75	10.80 "	13.25
No. 3	9.20 "	11.25	10.35 "	12.50
No. 4	8.90 "	10.75	10.05 "	12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated	$13.65 @		$15.5
No. 2 Glossy Coated	12.40 "		14.0
No. 3 Glossy Coated	11.60 "		13.2
No. 4 Glossy Coated	11.15 "		12.7
No. 1 Antique (watermarked)	10.25 "		11.7
No. 2 Offset	9.60 "		11.0
A Grade E. F.	9.35 "		10.7
A Grade S. & S. C.	9.60 "		11.0
B Grade E. F.	8.85 "		10.2
B Grade S. C.	9.10 "		10.5
C Grade E. F.	8.55 "		9.7
C Grade S. C.	8.80 "		10.0
D Grade E. F.	8.25 "		9.5
D Grade S. & S. C.	8.50 "		9.7

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight Not Exceeding OPA Allowances.

Bl. Softwood Sulphite	$86.00
Unbl. Softwood Sulphite	74.00
Bl. Hardwood Sulphite	83.50
Unbl. Hardwood Sulphite	71.50
Bl. Mitscherlich	81.00
Unbl. Mitscherlich .. 72.00 @	82.00
N. Bleached Sulphate	86.00
S. Bleached Sulphate	79.00
N. Semi-Bleached Sulphate	82.00
S. Semi Bleached Sulphate	75.00
N. Unbl. Sulphate	73.00
S. Unbl. Sulphate	63.50
Bl. Soda	76.00
Unbl. Soda	72.00
Groundwood	50.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area)	10.50
West Coast (out area)	16.50

	50%-80% Air Dry Weight
Northeast	11.50
Lake Central	11.50
Southern	14.00
West Coast (in area)	9.50
West Coast (out area)	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.25*
Silesias No. 1	—	"	5.75*
New Unbleached	6.75	"	7.50*
Blue Overall	—	"	5.50*
Fancy	—	"	3.50*
Washables	—	"	3.00*
Bleached Khaki Cuttings	—	"	4.25*
Unbleached Khaki Cuttings	—	"	3.50*

*OPA Maximum Prices

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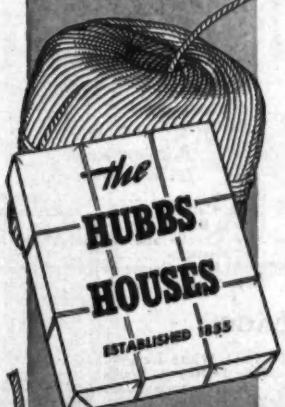

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BRANDON DRYER FELTS

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TRI-UMPH all cotton, 3 ply 53 oz., widths up to 250".

ZEPHYR all cotton, 3 ply 45 oz., widths up to 196".

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Christian Co., Richmond, Va.
Frank P. Wilder, Portland, Ore.
James A. Taylor & Son, Portland, Maine

Old Rags

White, No. 1—			
Repacked	*3.80	"	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Thirds and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.30	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

Pre-War Quotations

All Prices Nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.25	@	3.30
Wool Tares, light	3.25	"	3.50
Wool Tares, heavy	3.50	"	3.75
Bright Bagging	3.25	"	3.50
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	2.00	"	—

* OPA Maximum Prices.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Mixed Books	1.10	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Mixed Ledger, colored	2.00	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.95	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	1.10	"	—

Twines

All Prices Nominal

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17¼	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—

(Hard Fiber)

Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¾
Light Silesias	.05¾
Black Silesias, soft	.03½
New Unbleached	.07½
Washable Prints	.04¼
Washable No. 1	.03
Blue Overall	.05½
Cottons—According to grades—	
Washable Shredding	.01¾
Fancy Percales	.04¾
New Black Soft	.03¼
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04¼
Men's Corduroy	.03½
Ladies' Corduroy	.03
Cottonades	.03¼

Domestic Rags (Old)

White No. 1—Repacked	3.80	@	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
White No. 2—Repacked	2.90	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	@	3.50
No. 1 Clean bright—			
Sisal Strings	.04	"	—
No. 2 Clean bright—			
Sisal Strings	.03	"	—
Sisal Jute	.02½	"	.02¾
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila.)

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Ledger, colored	2.00	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Box Board Cuttings	.72½	"	—
Kraft Corrugated Cuttings	2.25	"	—
Old Corrugated Containers	1.40	"	—
Overissue News	1.00	"	—
No. 1 News	1.00	"	—

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices, Baled

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Overissue News	1.10	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	2.75	@	2.90
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	*	"	4.00
Mixed Rope	—	"	1.55
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.00	"	3.25
South American	—	"	3.25
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	—
Aust. Wool Pouches	—	"	3.65
New Zealand Wool Pouches	—	"	3.50
New Burlap Cuttings	4.75	"	5.00
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Roofing Bagging	1.35	"	—

* OPA Maximum Prices.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¼	"	.05
New White No. 1	.06¾	"	.07
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06¾
Underwear Cutters, Bleached	.06¾	"	.06¾
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06¾
New Black Silesias	.03	"	.03¾
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06½	"	.06¾
Blue Cheviots	.05½	"	.06
Fancy	.02¾	"	—
Washable	.02¾	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03¼	"	.03½
New Canvas	.06¼	"	.06½
B. V. D. Cuttings	.06¼	"	.06½

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—*
Miscellaneous	3.20	"	—*
White No. 2—			
Miscellaneous	2.65	"	—*
Twos and Blues, Repacked	2.20	"	—*
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—*
Miscellaneous	1.80	"	—*
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—*
No. 2	1.45	"	—*
No. 3	1.35	"	—*
No. 4	1.35	"	—*
No. 5, Quality A	1.35	"	—*
Quality B	1.20	"	—*
Quality C	.95	"	—*
Old Manila Rope	5.75	"	—*

* OPA Maximum Prices.

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices, Baled

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.30	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
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No. 1 Roofing Rags	1.55	"	—
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Sometimes small things make lots of trouble. Could your machinery be changed a little to save a lot of work? Write and tell us what we can do to help. Or a *Union* representative will be glad to call.

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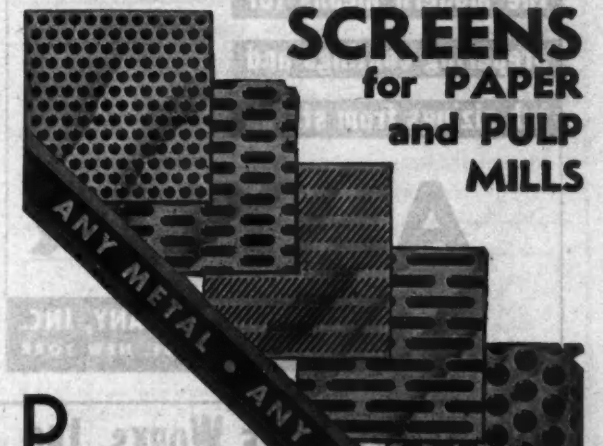

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PERFORMANCE of your Centrifugals, Shakers and Driers definitely improved by the use of precision screens built to your specifications. Let us "sit in" on your screening problems.

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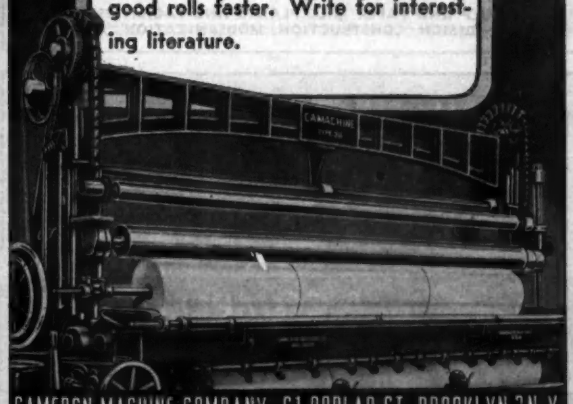
Good paper deserves to be put up in good rolls, poor paper demands it. Good paper will almost sell itself but in poor rolls it needs considerable selling. Use CAMACHINES to wind good rolls faster. Write for interesting literature.



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FELT WASHING COMPOUNDS

Are Your Felts Hard? Do They Lose Their Life Quickly? Use Pionite Felt Washing Compounds for *increased* felt life!

They reduce surface tension of water, prevent the precipitation of insoluble lime precipitates, disperse pitch, emulsify quickly, and rinse freely.

They *Remove*, After Continued Washing, Precipitates which have become imbedded in the fibres of the felts. We have in some instances increased Felt Life up to 25%.

Mail the attached form for a generous sample of the best suited Pionite Felt Washing Compound for your plant.

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Wash Felts—On Paper Machines ☐
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Name of Company
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BLEACHED SULPHITE AND SODA PULP
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"EXCELSIOR" FELTS

Manufacturers of Felts of Superior Quality
for Every Grade of Pulp and Paper

KNOX WOOLEN COMPANY

CAMDEN, MAINE

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CHEMICAL ENGINEER

For position as Assistant Chief Chemist in large southern kraft pulp and paper mill. Position is permanent with excellent opportunities for advancement. Applicant should have five to ten years experience in the kraft industry. Letter of inquiry should contain all pertinent information, regarding education, experience, service status, etc. Rules and regulations of the War Manpower Commission will be observed. Address Box 45-417, care Paper Trade Journal. A-9

WANTED

TOUR BOSS, MACHINE TENDER, SHIPPING CLERK. Board Mill located in Northeastern Pennsylvania, making Folding Grades.

Extensive plans for expansion under way.

Excellent post-war future assured. Permanent jobs, good chances for advancement for the right men.

Only men looking for permanent connection and steady work need apply. Box 45-411 care Paper Trade Journal. A-23

Services of experienced facial tissue man available to manufacturer interestd in converting present Yankee Straight Fourdrinier or cylinder machines to facial production. Will take complete charge and responsibility of engineering change-over construction, and getting final production up to maximum on short term contract basis. Address Box 45-422 care Paper Trade Journal. A-2

SALARIED POSITIONS — This advertising service of 35 years' recognized standing negotiates for high salaried supervisory, technical and executive positions. Procedure will be individualized to your personal requirements and will not conflict with Manpower Commission. Retaining fee protected by refund provision. Identity covered and present position protected. Send for details R. W. BIXBY, INC., 117 Delward Bldg., Buffalo 2, N. Y. tf

SALESMAN for large folding carton and specialty manufacturer. Unusual opportunities. Give full qualifications, age and draft status. Replies held in strictest confidence. EMPIRE BOX CORPORATION, GARFIELD, N. J. A-2

WANTED—Machine Tender, Master Mechanic, Beater Engineer. Middle aged men preferred Small .009 straw mill, slow running machines Keuka Paper Corp., Penn Yan, N. Y. A-2

ENGINEER with 6 to 10 years experience in the paper industry for sales, design, erection and operating work in connection with concern building pulp and paper mills abroad. Will probably involve project residence various places abroad portion of time, balance in New York City. Expenses while abroad. First letter must state age, experience, education, draft status, salary expected. Send photo, if available. Give references in paper industry especially equipment firms. Address Box 45-395 care Paper Trade Journal. A-2

WANTED—We need a graduate chemist in our expanding product development laboratory who has a background of paper chemistry and is familiar with all types and kinds of paper coatings including resins and lacquers. Address Box 45-398 care Paper Trade Journal. A-16

WANTED—CHIEF CHEMIST for pulp and paper mill located on Pacific Coast. Apply in own handwriting giving references, experience and other pertinent information. Address Box 45-243 care Paper Trade Journal. TF

WANTED—A recent college graduate in paper chemistry to work in our laboratory on paper coating compounds and heat sealing compounds. Address Box 45-397 care Paper Trade Journal. A-16

MACHINE TENDER for cylinder machine operations. Must be experienced at this particular kind of machine operations. Prefer high school graduate or equivalent. Address Box 45-293 care Paper Trade Journal. TF

WANTED—Chief Engineer and Master Mechanic. Must have paper mill experience. Reply to T. J. Russell, Manager, Sangamon Paper Mills, Eaton, Indiana. A-9

HELP WANTED

CHARLES P. RAYMOND SERVICE INC.
294 Washington St., Boston, Mass.

Specializing in Paper Mill Personnel
Positions Now Open

Paper executive for paper house to buy and sell $7500 year
General superintendent bag manufacturing and printing
Electrical engineer $5000-5500 year
Salesmen and sales managers for kraft board and specialties, groundwood papers, etc.
Office Managers (two)
Master mechanics, plant engineers, mechanical engineers, draftsmen, designers, machinists, millwrights
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Chemists and laboratory men
Machine tenders, back tenders, 3rd and 4th hands

We invite correspondence (strictly confidential) with employers seeking personnel and men seeking new positions. J-26

WANTED—CHIEF ENGINEER—Take complete charge of power plant at large board mill. Location—middle west. Unusual opportunity for right party. Apply in own handwriting giving references, experience, age and other pertinent information. Address Box 45-425 care Paper Trade Journal. J-26

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HELP WANTED

WANTED
ASSISTANT TO CHIEF ENGINEER

To take complete charge of our Power Plant supervising the operation and maintenance of high pressure boilers, turbines, and auxiliary equipment. Young man with both technical and practical background preferred. Excellent opportunity for growth in responsibilities. Give complete personal and business history in letter of application.

FORT HOWARD PAPER COMPANY
Green Bay, Wisconsin A-2

WANTED

Machine operators for Aluminum foil paper laminating, lacquering and slitting machines. Modern paper converting factory located in New York City. Write or call on Mr. Saunders for descriptions of these jobs showing rates, hours, incentives, etc.

KELLER-DORIAN CORPORATION
516 West 34th Street
New York 1, N. Y. J-26

WANTED—Mechanical Engineer with several years' experience in the pulp and paper industry for pulp and paper mill in Middle West. Please state age, experience, salary expected, Draft Status. Address Box 45-426 care Paper Trade Journal. A-9

WANTED—TOUR BOSSES for Roofing Felt Mill. Excellent opportunity for right man. Postwar future. Send complete resume giving experience, etc. to Box 45-427 care Paper Trade Journal. A-9

CHEMIST with organization ability and initiative for responsible position in quality control work with Midwest manufacturer of packaging materials. Background in resing desirable. Address Box 45-428 care Paper Trade Journal. A-16

WANTED—Large Boxboard Mill in mid-west needs man in supervisory work in new folding carton department. Experience on cutting, creasing and gluing machines and single color press desirable. Excellent post-war opportunity. Write full details. Address Box 45-431 care Paper Trade Journal. J-26

SITUATIONS WANTED

SUPERINTENDENT—20 years experience in paper bag conversion of grocery, sacks and aniline or oil ink specialty bags. Capable of handling all bag shop problems. Thorough experience in supervision of help, maintenance and repairing of machines. Address Box 45-355 care Paper Trade Journal. A-2

YOUNG COLLEGE GRADUATE — Experienced in supervision, quality and technical control, also coatings, resins, plastics and board manufacturing—seeks opportunity in paper and allied fields. Address Box 45-381 care Paper Trade Journal. TF

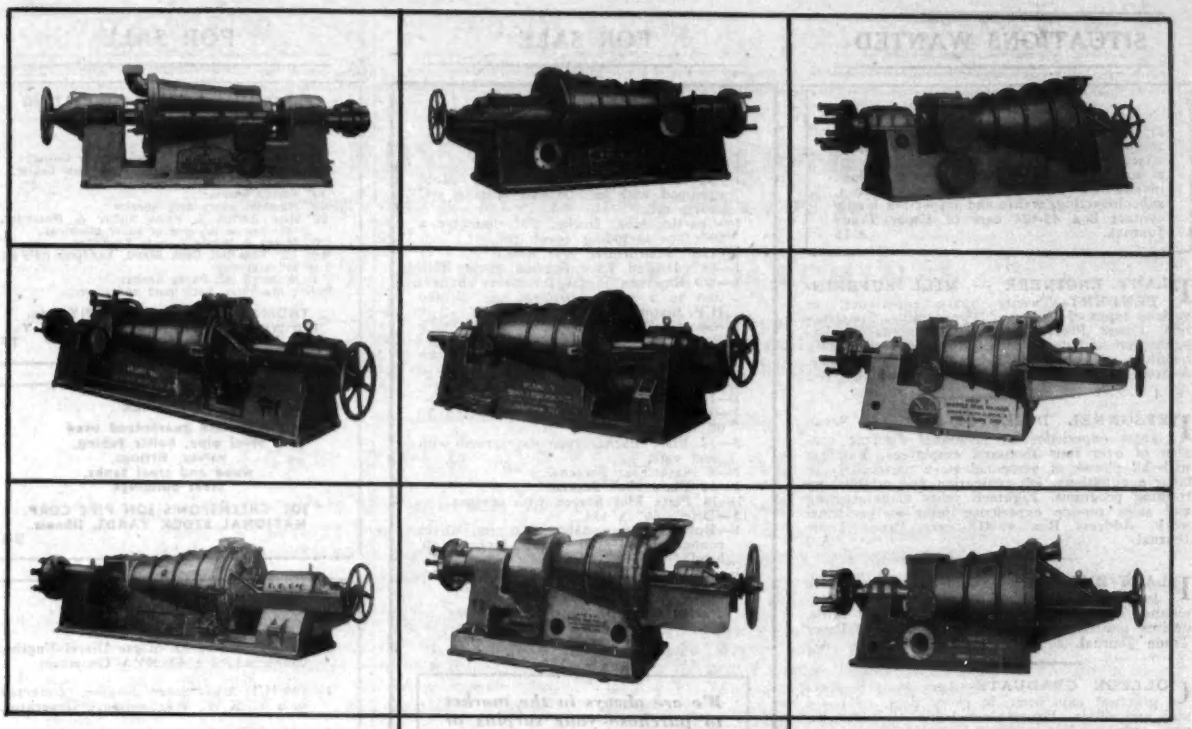
COATING AND FINISHING SUPERINTENDENT—Thorough experience in coating and finishing of all types cardboards. Now employed, wishes change. Address Box 45-384 care Paper Trade Journal. J-26

AMBITIOUS MAN—40. College background. Experienced all phases fine and coarse paper, also twine. Will sell or accept responsible position with manufacturer, sales agency or distributor anywhere in U. S. A. Address Box 45-390 care Paper Trade Journal. J-26

FIRST CLASS all around Master Mechanic, in mills making various weights of board, also tissue, steam and electric equipment. Cylinder and fourdrinier, pulp mills. References. Address Box 45-391 care Paper Trade Journal. A-2

GENERAL SUPERINTENDENT — Wishes change. 25 years experience on free sheets, ground wood specialties, news and Kraft. Fourdrinier and cylinder machines. Age 43. Go anywhere. Prefer Canada. Would take position colorist or personnel manager in large mill. Address Box 45-402 care Paper Trade Journal. A-2

TRAFFIC MANAGER position wanted. 23 years experience with the N. Y. Central System. Age 38. Business ability. Address Box 45-433 care Paper Trade Journal. A-9



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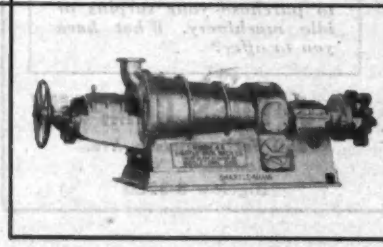

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SELECT A MIAMI. WHY A MIAMI? BECAUSE:

Miami Jordans are more ruggedly built.
Miami Jordans are surprisingly free from vibration.
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Miami Jordans in the long run are the best dollar for dollar buy.

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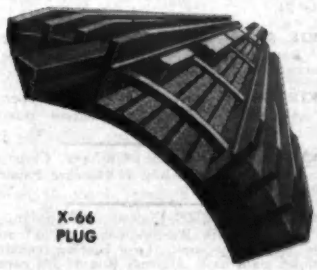

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Shartle can furnish the *best* plug ever designed—the X66. Why best? Because there is several times more side metal support in an X66 than you can get in any other plug—which means strength. Scores of mills use X66 plugs. To date not one failure has been reported.

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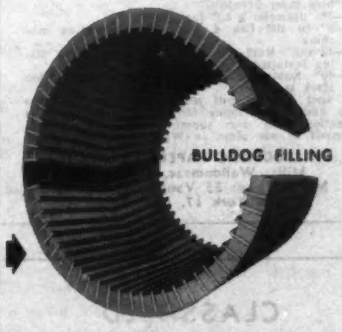
Shartle can supply Bulldog filling for any make, type, size or age Jordan ever built. Built in jigs by experienced men and guaranteed right.



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MIDDLETOWN, OHIO

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If you are looking for a capable, honest and aggressive purchasing agent to handle selection of suppliers, expediting, disposal of surplus, initiating use of new materials, inventories, material control, acceptance, subcontracting, traffic and inspection kindly contact box 45-424 care of Paper Trade Journal. A-16

PLANT ENGINEER — MILL SUPERINTENDENT—Twenty years experience, in various types of Pulp and Paper mills. Construction. Power Plant Operation. Maintenance. Experimental and development work. Experienced in handling all types of help. Available at once. Address Box 45-409 care Paper Trade Journal. A-2

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PLANT ENGINEER—Technical graduate with long experience in design, construction, maintenance and operation of Pulp and Paper Mills, desires position. Address Box 45-410 care Paper Trade Journal. A-9

COLLEGE GRADUATE—Age 31. 11 years practical experience in every dept. of board mill and office. Expert knowledge of waste papers, pulp, production methods, costs, government reports and traffic. Desires position with progressive organization. Address Box 45-432 care Paper Trade Journal. A-2

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REVAMPING AND BUILDING MILL AND CAN OFFER FOR SALE

One large Breaker Beater complete
One small Beater Complete
1—30" Diameter X 90" Face cylinder mold
1—8x8 Shartle Duplex plunger stock pump
1—New pair cast steel double suspension spring type beater bearings for 8" diameter journal —Noble & Wood beater roll. Never used
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3—200 KVA —33000-2300Y/4000 volts transformers
1—250 H.P. slip ring motors & controls—450 R.P.M.—3 bearing base and pulley
60—52" Face steel dryer felt rolls—1—7/16" journals
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4—36" diameter x 63" face dryers
1—6" to 10" Cox & Sons Pipe threading machine
1—48"x48" Noble & Wood beater roll with filling installed
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A visit to the mill would prove profitable as we have many items for sale to numerous to mention. See our superintendent Mr. O. P. Fussell at our plant in Walloomsac, New York.

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Mills: Walloomsac, New York
Main Office: 25 Vanderbilt Avenue
New York 17, New York TF

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FOR SALE

FOR SALE

1—Saveall 36" x 136" Cylinder Mold equipped with anti-friction bearing and couch roll.
1—Shartle Bros. Decker 36" diameter x 60" face including couch roll.
1—120" Fourdrinier Wet End.
1—68" Drilled Face Suction Press Roll.
1—#9 Emerson Jordan for direct connection to a motor, requires use of 400 H.P. motor.
1—Shartle Brothers Duplex 10 x 20 Stock Pump.
1—Moore & White 10 x 12 Triplex Stock Pump.
2—2000 lb. Holyoke Beaters.
1—1000 lb. Dayton Beater.
1—Jones pulper — direct connected to 60 H.P. motor.
2—12 Plate Packer type flat screen with steel vats.
2—6 Plate Flat Screens.
1—12 Plate Flat Screen.
1—18 Plate Flat Screen with scraper.
13—Driers 60" x 154".
1—Buffalo Pump—5500 g. p. m., direct connected to 100 H.P. Motor (50' head).
1—#4 Roots-Connersville Vacuum Pump.
2—65" Cameron tensions for winders.

Various sizes of Centrifugal Pumps. Write us regarding your particular requirements.

We are always in the market to purchase your surplus or idle machinery. What have you to offer?

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FOR SALE

1—7-roll 48" wide Holyoke Super Calender Stack, complete with 50 H.P. G. E. a.c. 3 phase 60 cycle, 220 volt motor equipment. Machine in perfect condition.
1—62" Heavy Type Hudson Sharp two-shaft Center Wind Slitter and Rewinder. Very suitable for board work.
1—50" Kidder Score Cut Slitter and Rewinder.
1—84" Left Hand 4 Knife Carthage Chipper with two new sets of knives.
1—Complete Pulp Drying Machine with 60 Dryers 48" x 146".
1—48" Kidder Shear Cut Model S.L. Slitter and Rewinder.
1—Noble & Wood Pony Jordan. Good condition.
1—30" Camachine 44W Low Model Roll Rewinder. Complete and in good condition.
1—#2 Lamoye Pulper complete with 40 H/P A.C. motor equipment. A-1 condition.
1—110" Double-Drum Waldron late type shear cut hydraulic Slitter and Rewinder.
1—12" x 14" Brownell Variable Speed Engine, equipped with Moore & White Speed Change, Governor and Overspeed Protection. A-1 condition.
1—60" Meisel Double Drum Type OP Series Shear Cut Slitter and Rewinder.

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NARRAGANSETT COATED PAPER CORP.
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Bigelow 3-3720 J-26

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FOR SALE—Black-Clawson #2 Jordan. Reconditioned with Ryertex bearings, ¼" steel fillings practically new. Two bearing construction, without main base. Address Box 45-388 care Paper Trade Journal. J-26

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2 Cast Iron Vats with cylinders 48" x 146"—Couch rolls 124" diameter—3 sets of presses hydraulically controlled—64 dryers 48" x 144", four tiers high, complete with piping, drives, Hamblet Cutter, layboy and crane. This machine is on its original foundation.

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1—42" Liner and combining machine. Fourteen 6" diameter steam heated rolls and one drier 24" diameter.
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1—Farrell 104" 10 roll Calender Stack with Warren Doctor. Beloit Hypoid Drive.
1—Pusey & Jones 104" 11 roll Calender Stack with Warren Doctors Master Gear Drive.
2—Pusey & Jones 104" face and 115" face Removable drum reels.
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1—Frederick 5" Centrifugal stock pump 600 g. p. m. 50' head. 1165 r.p.m.
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WANTED

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WANTED

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WANTED—W & P Shredders, Evaporators Generators and Boilers, Slitters, Cutters Hydraulic Presses, Sheridan Presses, Dryers Address Box 44-835 care Paper Trade Journal tf

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A-16

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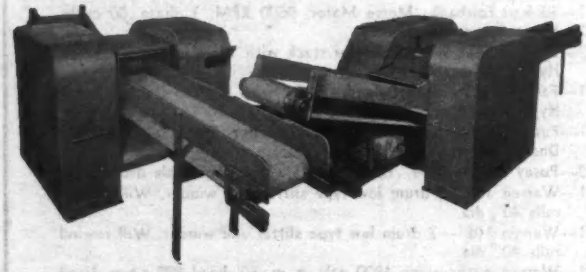

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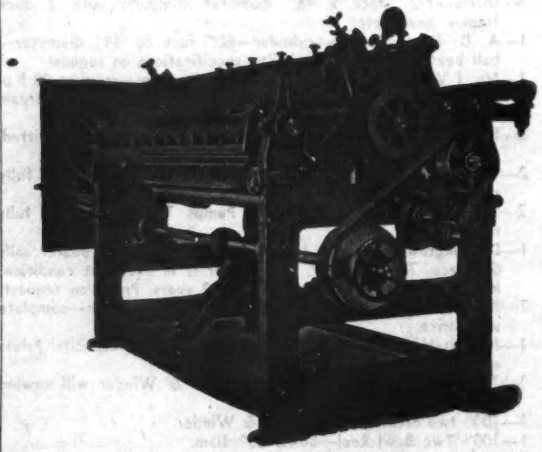

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United States Rubber Co.

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Noble & Wood Machine Co.
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GEARS
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Downingtown Mfg. Co.
Farrel-Birmingham Co.
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Moore & White Co.
D. J. Murray Mfg. Co.
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Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

GRINDERS
Farrel-Birmingham Co.
Lobdell Car Wheel Co.
Montague Machine Co.
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
Simonds Worden White Co.
United States Rubber Co.

HEATING, VENTILATING AND AIR CONDITIONING
The Appleton Machine Co.
Armstrong Machine Works
Fibre Making Processes, Inc.
E. D. Jones & Sons Co.
General Electric Co.
Grinnell Company
Leeds & Northrup
D. J. Murray Mfg. Co.
Noble & Wood Machine Co.
Ross Engineering Corp., J. O
Shartle Brothers Machine Co.
Valley Iron Works Co.
Worthington Pump & Mchy Corp

HOISTS
Appleton Machine Co.
Ditts Machine Works
Rodney Hunt Machine Co.
Ingersoll-Rand Co.
E. D. Jones & Sons Co.

HOSE (Air, Water, Suction, etc.)
The Cincinnati Rubber Mfg. Co.
The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan Inc.
United States Rubber Co.

INSTRUMENTS, TESTING AND MEASURING
W. H. & L. D. Betz
N. P. Bowsher
The Bristol Company
Builders-Providence, Inc.
The Foxboro Company
General Electric
W. & L. E. Gurley
Leeds & Northrup Company
National Technical Laboratories
B. F. Perkins & Son
Taber Instrument Corp.
Taylor Instrument Cos.
Wallace & Tiernan Co., Inc.

JORDAN FILLINGS
Appleton Machine Co.
Behr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Noble & Wood Machine Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black-Clawson Company
Ditts Machine Works, Inc.
Hamblet Machine Co.
E. D. Jones & Sons Co.
Simonds Worden White Co.
Valley Iron Works Co.

LABORATORY EQUIPMENT
Appleton Machine Co.
W. H. & L. D. Betz
Ditts Machine Works
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories
Noble & Wood Machine Co.
Taber Instrument Co.
Taylor Instrument Companies
Valley Iron Works Co.

LAY BOYS
Hamblet Machine Co.
Moore & White Co.
Shartle Brothers

LUBRICANTS
Gulf Oil Corporation
Gulf Refining Co.
Sinclair Refining Co.
Socony-Vacuum Oil Co., Inc.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

LUBRICATORS
Hills-McCanna Co.

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Montague Machine Co.
Lobdell Car Wheel Co.
Walker-Goulard-Plehn Co.

MIXERS
H. K. Porter Company
Youngstown Welding & Engrg. Co.

MOISTENING EQUIPMENT
The Spray Engineering Co.

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Co
Ingersoll-Rand Co.
Reliance Electric & Engrg. Co.
Westinghouse Electric Corporation

PACKING BOXES
Johnson Corporation
Shartle Brothers Machine Co.

PACKING
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
United States Rubber Co.

PAPER MACHINES
Black-Clawson Company
Downingtown Mfg. Co.
Thomas W. Hall Co.
Moore & White Co.
Pusey & Jones
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester

PAPER MACHINE SLICES
Black-Clawson Company
E. D. Jones & Sons Co.
Montague Machine Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPERMILL BUILDERS
Merritt Chapman & Scott Corp.

PAPER TUBE MACHINERY
Ditts Machine Works
Thomas W. Hall Co.
Hudson Sharp Machine Company
Langston Co., Samuel M.

PASTING MACHINES
Black-Clawson Company
Davis, Frank H., Co.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

PERFORATED METAL
Allis-Chalmers Mfg. Co.
Harrington & King Perforating Co.
Hendrick Mfg. Co.

PIPE
Black-Clawson Company
Crane Company
Grinnell Company
Shartle Brothers Machine Co.
Taylor Forge & Pipe Works
Walworth Company
Youngstown Welding & Engrg. Co.

PLATERS
Perkins & Son, Inc., B. F.

PLATES
Black-Clawson Company
Hendrick Mfg. Co.
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Timken Roller Bearing Co.

PLUGS
Black-Clawson Company
E. D. Jones & Sons Co.
The Noble & Wood Machine Co.
Shartle Brothers Machine Co.

PRESSES
Black-Clawson Company
Farrel-Birmingham Co.
Dietz Machine Wks.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
Paper Converting Machine Co., Inc
Potdevin Machine Co.
Rotogravure Engineering Co.
Shartle Brothers
Valley Iron Works Co.
Waldron Corp., John
Weber, Homer G.

PUG MILLS
Traylor Engineering & Mfg. Co

PULPS
Andersen Co., J.
Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Rlof Hanseon, Inc.
Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.

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Allis-Chalmers Mfg. Co.
Black-Clawson Company
Dorr Company
Downingtown Mfg. Co.
De Laval Steam Turbine Co.
Frederick Iron and Steel Co.
Hills-McCanna Co.
Ingersoll-Rand Co.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Noble & Wood Machine Co.
Paper Converting Mch. Co.
Quimby Pump Co. Div. of H. K. Porter Company, Inc.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Warren Steam Pump Company
Worthington Pump & Machinary Corp.

RECOVERY SYSTEMS
Bulkley, Dunton Pulp Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones
Ross Engineering Corp. J. O.
Valley Iron Works Co.

RECTANGULAR BINS
Traylor Engineering & Mfg. Co.

REELS
Black-Clawson Company
Downingtown Mfg. Co.
De Laval Steam Turbine Co.
Hudson Sharp Machine Company
The Kohler System Company
Montague Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Rodney Hunt Machine Co.
Rotogravure Engrg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co.

REFINERS
Appleton Machine Co.
Behr Brothers Mfg. Co.
Bauer Brothers Co.
Ditts Machine Works
The Hermann Manufacturing Co.
E. D. Jones & Sons Co.
Murray, D. J. Mfg. Co.
Noble & Wood Machine Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sprout, Waldron & Co.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS
Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
The Bristol Company
The Brown Instrument Co.
The Foxboro Company
Jones, E. D., & Sons Co.
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
National Technical Laboratories
Noble & Wood Machine Co.
Shartle Brothers
Taylor Instrument Companies
Wallace & Tiernan
Westinghouse Electric Corporation

RESINS
American Cyanamid & Chemical Corp.
American Resinous Chemicals Corp.
The Resinous Products & Chemical Co.

ROLLS
Appleton Machine Co.
Black-Clawson Company
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Improved Paper Machy. Corp
Lobdell Co.
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
Montague Machine Co.
D. J. Murray Mfg., Co.
Noble & Wood Machine Co.
Perkins, B. F., & Sons Co.
Pusey & Jones Corp.
Roehlen Engraving Co.
J. J. Ross Company
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Shenango-Penn Mold Co.
Sinclair Co.
Smith & Winchester Mfg. Co.
Stearns Magnetic Mfg. Co.
United States Rubber Co.
Valley Iron Works Co.
Waldron Corp., John

ROLL COVERS
The Cincinnati Rubber Mfg. Co.
Youngstown Welding & Engrg. Co.

ROLL STANDS
Cameron Machine Co.
Johnstone Eng. & Machine Co
The Kohler System Company
Moore & White Co.
Potdevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co

ROTARY KILNS
Traylor Engineering & Mfg. Co.

SATURATING MACHINES
Black-Clawson Company
Moore & White Co.
Noble & Wood Machine Co
Potdevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co
Waldron Corp., John
Weber, Herman C.

SCALES
Builders-Providence, Inc.
Merrick Scale Mfg. Co

SCREEN PLATES
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Union Machine Co.
Union Screen Plate Co.

SCREENS
Allis-Chalmers Mfg. Co.
Appleton Wire Works
Appleton Machine Co.
Bird Machine Company
Carthage Machine Co.
Ditts Machine Works, Inc.
Downingtown Mfg. Co.
Harrington & King Perforating Co.
Hendrick Manufacturing Co
E. D. Jones & Sons Co.
Montague Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Traylor Engineering & Mfg. Co.
Valley Iron Works Co.

SCRUBBERS
Traylor Engineering & Mfg. Co

SHEET MACHINES
Thomas W. Hall Co.
The Hermann Manufacturing Co.
Noble & Wood Machine Co.
Rotogravure Engrg. Co.
Valley Iron Works Co.

SHOWER PIPES
Bird Machine Company
A. E. Broughton & Co.
Downingtown Mfg. Co.
Improved Paper Machy. Corp.
Moore & White Co.
Shartle Bros. Mach. Co.
Smith & Winchester Mfg. Co.

SHREDDERS
Bauer Brothers Co.
Carthage Machine Co

SIZING
American Cyanamid & Chemical Co.
American Resinous Chemicals Corp.
Black-Clawson Company
The Dow Chemical Co.
du Pont, E. I., de Nemours & Co.
National Oil Products Co
Paper Makers Chemical Department, Hercules Powder Co.
Pioneer Salt Company
Socony-Vacuum Co.
Philadelphia Quartz Co.

SLITTERS
Black-Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Dietz Machine Works
Downingtown Mfg. Co.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Company
Johnstone Eng. & Machine Co
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co
Potdevin Machine Co.
Rotogravure Engrg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co
Valley Iron Works Co
Waldron Corp., John

SPRAY NOZZLES
The Spray Engineering Co.

STAINLESS STEEL
Allegheny Ludlum Steel Co.
Eastern Stainless Steel Corp.
Industrial Steels, Inc.

STARCH
American Cyanamid & Chemical Corp
Clinton Co.
National Starch Products, Inc.
Stein, Hall & Co., Inc.

WHERE TO BUY

STEAM SPECIALTIES
Johnson Corp.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

STRAPPING & STRAPPING MACHINES
Acme Steel Company
The Stanley Works

STUFF CHESTS
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOXES
Black-Clawson Company
A. E. Broughton & Co.
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Westinghouse Electric Corp.

SULPHUR
American Cyanamid & Chemical Corp.
Sauffer Chemical Company
Texas Gulf Sulphur Co.
Witco Chemical Company

SULPHUR BURNERS
Valley Iron Works Co.

TALC
American Cyanamid & Chemical Corp
W. H. Loomis Talc Corp.
International Talc Company

TANKS
Frederick Mfg. Co.
E. D. Jones & Sons Co.
Kalamazoo Tank & Silo Co.
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
The Noble & Wood Machine Co.
H. K. Porter Company Inc.
Rodney Hunt
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.

Traylor Engineering & Mfg. Co.
United States Rubber Co.
Waldron Corp., John
Youngstown Welding & Engrg. Co.

THICKENERS, DECKERS & SAVEALLS
Bird Machine Company
Bulkley, Dunton Pulp Co. Inc.
Carthage Machine Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
Montague Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

TITANIUM
E. I. Du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.
Witco Chemical Company

TOOLS
Acme Steel Company
Ingersoll-Rand Co.
The Stanley Works
Walworth Company

TRUCKS
Elwell Parker Electric Co.
Wright-Hibbard Ind. Elec. Truck Co

TRAPS
Armstrong Machine Works
Crane Co.
Grinnel Company
Johnson Corporation
Shartle Bros. Mch. Co.

TUBS
Rodney Hunt Machine Co.
Noble & Wood Machine Co.
Shartle Brothers
Valley Iron Works Co.

TURBINES
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company
Hunt, Rodney, Mach. Co.
Westinghouse Electric Corp.
Worthington Pump & Machinery Corp.

USED EQUIPMENT
Frank H. Davis Company
Gibbs-Brower Co.
Thomas W. Hall Co.
Noble & Wood Machine Co.
Rotogravure Engrg. Co.
J. J. Ross Company
Shartle Brothers Machine Co.

VALVES
The Bristol Company
Crane Company
Dilts Machine Works
Fibre Making Processes, Inc.
The Foxboro Company
Hills-McCanna Co.
E. D. Jones & Sons Co.
Kennedy Valve Mfg. Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
Noble & Wood Machine Co
The Permutit Company
William Powell Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Taylor Instrument Companies
Valley Iron Works Co.
Walworth Company

VATS & VAT PARTS
Union Machine Co.
Union Screen Plate Co.

WASHERS
Bird Machine Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

WATER CONDITIONING
The Permutit Company

WAXING MACHINERY
Black-Clawson Co.
Potdevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

WELDING EQUIPMENT
Allis-Chalmers Mfg. Co.
General Electric Company
Walworth Company
Westinghouse Electric Corp.

WET MACHINES
Black-Clawson Co.
Carthage Machine Co.
Downingtown Mfg. Co.
Moore & White Co.
Montague Machine Co.
Noble & Wood Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WINDERS AND REWINDERS
Black-Clawson Company
Cameron Machine Co.
Dietz Machine Works
Downingtown Mfg. Co.
Thomas W. Hall Co.
Hudson-Sharp Mach. Co.
Langston Co., Samuel M.
Johnstone Eng. & Machine Co
The Kohler System Company
Montague Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Potdevin Machine Co.
Pusey & Jones Corp.
Rotogravure Engrg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Waldron Corp., John

WIRES
Appleton Wire Works
Black-Clawson Company
Bulkley, Dunton Pulp Co. Inc.
Cheney Bigelow Wire Works
Hayden Wire Works
International Wire Works
Lindsay Wire Weaving Co.
Shartle Brothers Machine Co.

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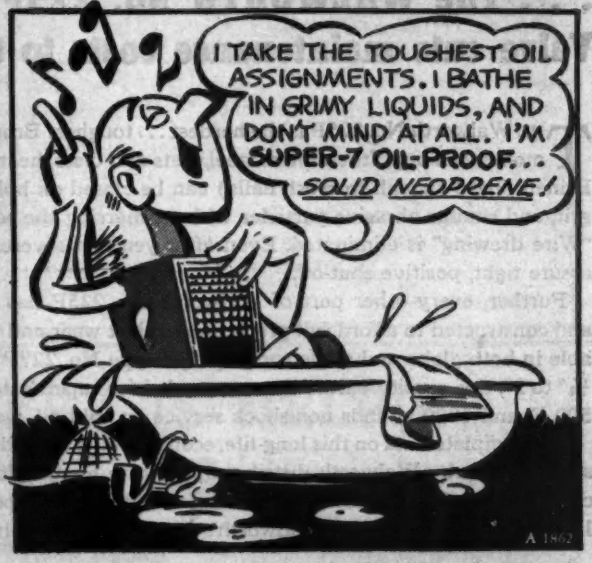
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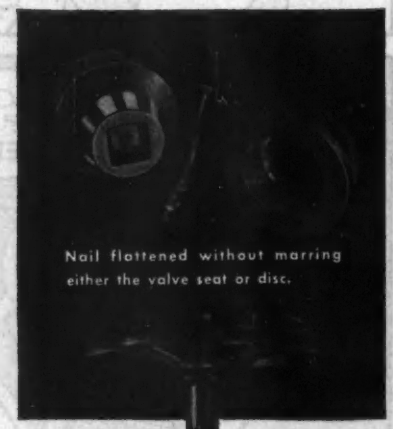

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